Rhode Island Department of Environmental Management

Quality Management Plan

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Appendix

I. Introduction

The regulatory programs within the Rhode Island Department of Environmental Management are in a partnership with EPA, documented in the Performance Partnership Agreement and DEM's Annual Program Work Plan, to implement various environmental programs in Rhode Island. EPA provides the funds for many state efforts to implement those programs through assistance agreements, or grants. Recently, EPA has added a condition to those assistance agreements that specifically requires recipients to develop and implement a Quality Management Plan.

It has always been the policy of the Department to ensure that all environmental data generated and compiled is of known quality, adequate for its intended use, well documented, and is verifiable and defensible. The grant condition has prompted the Bureau of Environmental Protection to prepare this written Quality Management Plan (QMP) to formally communicate that commitment and establish a process to ensure it is met.

For purposes of this plan, environmental data include direct measurements or data generation, compilation of data from literature or electronic media, and data supporting the design, construction, and operation of environmental technology. The QMP covers all of the data generation, data collection and management activities in the Offices of Air Resources, Compliance and Inspection, Water Resources, Waste Management and Technical and Customer Assistance. The Department may expand the scope of this plan in the future to integrate the separate QMP developed by the Pesticide Management program in the Division of Agriculture. Other programs may be included in the plan in the future.

This document describes the quality program that will be developed and implemented and defines the management structures that will be used in its implementation and was developed in accordance with the requirements set forth in EPA Requirements for Quality Management Plans (QA/R-2) (http://www.epa.gov/quality1/qs-docs/r2-interim-final.pdf).

II. Management and Organization

A. DEM Mission Statement

The Bureau of Environmental Protection consists of the Office of Air Resources, the Office of Water Resources, the Office of Waste Management, the Office of Compliance and Inspection, and the Office of Technical and Customer Assistance.

The management team for the Bureau consists of the Assistant Director for Water Resources, the Assistant Director for Air, Waste and Compliance, and six Office Chiefs.

The mission of the Bureau of Environmental Protection, and the Offices (the term Office and Division are used interchangeably in this document) included in the Bureau, is to work in an effective and coordinated manner to support the Department's mission of:

1. Enhancing the high quality of life for this and future generations by protecting, managing, and restoring the Environmental Protection of the state, enhancing outdoor recreation opportunities, protecting public health, and preventing environmental degradation.

2. Guiding utilization of the state's Environmental Protection to provide for sustainable economic opportunity while sustaining our natural environment.

3. Motivating the citizens of the state to practice an environmental ethic based on an understanding of their environment, their own dependence on it, and the ways in which their actions affect it. (Strategic Assessment, 1996)

The Bureau regulates many diverse activities that affect the environment. Effective regulation protects public health, prevents further degradation, and supports the restoration of the environment where it has been adversely impacted by past activities. Effective regulation must include decision-making based on consistently sound data and information.

DEM has named Thomas Getz, the department Ombudsman, as the Quality Assurance (QA) Manager. DEM will take a decentralized approach in implementing the Quality Management Plan.

The QA Manager will be responsible for:
- The development, revision and implementation of the QMP.
- Establishing a training program to educate staff on the Quality System and instruct staff on proper QA and QC procedures
- The coordination of System Management Reviews and Project Audits

The program offices will have the responsibility for:
- The preparation of QA documents,
- Providing oversight of all QA related field and laboratory functions.
- The review of all contracts and agreements to ensure that they conform to the generally accepted QA/QC procedures and all QA/QC requirements mandated by cooperative agreements with federal agencies.
- The overall quality and integrity of all data generated within their programs.

The bureau management team, collectively, is responsible for quality through adherence to grant conditions, program policy and guidance, and through the development and adherence to Quality Assurance Project Plans (QAPPs) and Standard Operating Procedures (SOPs).

B. DEM Quality Assurance Policy

It is the policy of the Rhode Island Department of Environmental Management that all environmental data generated and compiled is of known quality and adequate for its intended use. Pre-established acceptance performance or criteria, with all aspects of its collection documented will define data collected, and that such documentation is verifiable and defensible. This goal can be achieved by ensuring adequate quality management steps and procedures are

used throughout the entire process, from initial study planning through data usage. Data usage may include permitting, enforcement, planning and assistance activities.

DEM has historically had a decentralized approach to ensuring quality in environmental data. The many individual programs have not documented their approach to ensuring quality; however, they have been focused on meeting the conditions of grants and cooperative agreements and following the quality requirements of the program guidance. Office Chiefs, and in some cases Section Supervisors within Divisions, have had primary responsibility for implementation of their programs, including ensuring the quality of the data that they base their decisions on. This QMP does not directly move the Bureau from a decentralized to a centralized system but imposes a formal structure, across Divisions and programs, on how quality goals will be met. Based on further evaluation and implementation, the Bureau may, or may not, elect to centralize some functions in the future.

C. Organizational Charts

The following organizational charts are incorporated directly into this Quality Management Plan in Appendix A:

- Department of Environmental Management
- Office of Air Resources
- Office of Compliance and Inspection
- Office of Technical and Customer Assistance
- Office of Waste Management
- Office of Water Resources

D. Management Roles, Responsibilities & Authorities for Quality System

The Assistant Director for Water Resources and the Assistant Director for Air, Waste and Compliance are ultimately responsible for developing and implementing a quality system in the Bureau of Environmental Protection. The QA Manager, however, will assist DEM in coordinating our QMP efforts and will provide EPA with a contact for questions concerning the QMP.

As stated earlier, the Department has historically had a decentralized approach to ensuring quality in environmental data. Office Chiefs, and in some cases Section Supervisors within Divisions, have had primary responsibility for implementation of their programs, including ensuring the quality of the data that they base their decisions on. A brief outline of the quality-related responsibilities for different positions in the Bureau hierarchy is outlined below:

Assistant Director for Water Resources and Assistant Director for Air, Waste and Compliance

Quality-Related Responsibilities: Provide policy definition, leadership, and oversight for the quality system throughout the Bureau and serve as the overall authority for directing activities in accordance with program policy. Responsibilities, concerning quality, include:

- Serving as the final authority for resolving quality related issues,
- Advocating for the necessary training,
- Advocating for resources to support the quality approach, and
- Ensuring that the Quality Management Plan (QMP) is in place and functioning.

Quality Assurance Manager:

- Provides departmental focus for the development, revision and implementation of the QMP.
- Establishes a training program to educate staff on the Quality System and instruct staff on proper QA and QC procedures.
- Responsible for the coordination of System Management Reviews and Project Audits.

Office Chiefs

Quality-Related Responsibilities: Provides policy definition, leadership, and oversight for their respective programmatic responsibilities and serve as the authority for directing activities in accordance with program policy. Responsibilities concerning quality include ensuring:

- Resources provided to their Offices are budgeted to support the quality approach;
- Staff attend necessary training;
- Grant commitments, program requirements, and grant conditions are met; and
- The Quality Management Plan (QMP) is in place and functioning in their Office.

Section Supervisors (actual Job Titles may vary depending on program)

Quality-Related Responsibilities: Primary responsibility is coordinating staff activities to meet the duties and responsibilities of the section and meet the agreed upon outputs presented in the grant agreements. The section supervisors oversee the activities of the staff within their program and provide a program-wide focus on quality management. With respect to quality issues, the section supervisors:

- Ensure the staff is knowledgeable of current program quality policy, requirements, and guidance;
- Establishes quality policy in coordination with management;
- Serves as quality program liaison between the section and EPA.
- Determines the acceptability of all QAPPs submitted for review and approval before implementation.

Project Managers (typically staff-level positions where actual job titles may vary depending on program)

Quality-Related Responsibilities: The project managers are responsible for:

- Ensuring a quality assurance project plan (QAPP) is provided for a specific site investigation or activity, if required;
- Establishing and implementing acceptance or performance criteria appropriate for the regulations involved during the planning of the project; (These acceptance or performance criteria will be noted in the QAPP, and will be used to define data quality requirements.)
- Ensuring the quality of the information generated meets the acceptance or performance criteria of the project throughout the implementation and assessment of the project;
- Supervising technical project staff who define project objectives and data quality requirements, develop work plans, review data, and develop and assess standard procedures.

E. Programs That Generate or Use Environmental Data for Decision Making

- Office of Air Resources

Air Toxics Monitoring:

OAR conducts the following monitoring activities:

- Operates and maintains the PM2.5 monitoring network.
- Operates 2 continuous PM2.5 monitoring sites and 2 speciated PM2.5 monitoring sites.
- Operates PM2.5 speciation monitors at 2 sites.
- Directs the DOH Air Pollution Laboratory in the operation of an approved NAMS/SLAMS air-monitoring network in conformance with 40 CFR 58.
- Oversees stack testing of emission sources.

In addition to implementation of the core air pollution control program, OAR was selected by EPA to conduct an extensive air toxics monitoring study in the Providence metropolitan area for one year. Providence is one of four cities in the country selected for this study. Two monitoring sites have been located in mixed industrial-residential neighborhoods; one in a heavily mobile source impacted neighborhood, and two in urban residential areas impacted by local sources. The results of this study will be used by the EPA to design a national air toxics monitoring network and by DEM to evaluate the air toxics levels in the Providence metropolitan area and to provide information to the public.

In addition, OAR collects short-term samples of toxic volatile organics, particulates, or other toxic species and uses the results to analyze the impacts from particular sources.

- Office of Compliance and Inspection

    - Emergency Response- OC&I maintains a staff of Emergency Responders on call 24-hours/day, 7-days/week to respond to threats from releases of oil or hazardous materials to the environment. Emergency Responders may conduct sampling to assess a situation or characterize materials under investigation.

- Air Compliance- OC&I's air compliance program monitors exterior lead paint removal projects and responds to complaints regarding non-compliant operations as well as responding to odor complaints associated with non-compliant or unlicensed facilities.
- RCRA Compliance Section- RCRA inspection staff conduct compliance monitoring on regulated hazardous waste management facilities, generators, and transporters, as well as responding to complaints of improper disposal of hazardous waste. Staff may conduct sampling to characterize materials under investigation.
- Solid Waste Compliance Section- Solid waste inspection staff conducts compliance monitoring on regulated solid waste management facilities as well as responding to complaints of improper disposal of solid waste. Staff may conduct sampling to characterize materials under investigation.
- Water Compliance- Water compliance inspection staff conduct investigations and compliance monitoring related to discharges to water bodies. Staff may conduct sampling to characterize materials under investigation.
- Water Compliance- ISDS compliance inspection staff conduct investigations and compliance monitoring related to discharges from individual septic disposal systems. Staff may conduct sampling to characterize materials under investigation.

- Office of Technical and Customer Assistance

  - Pollution Prevention- Staff assist businesses in investigating and evaluating opportunities to reduce pollution through product substitutions and/or process modifications. Staff may conduct sampling to characterize materials under investigation or evaluate the effectiveness of measures taken to prevent pollution.

- Office of Waste Management

  - Leaking Underground Storage Tank Assessment and Remediation- Staff oversee the investigation and clean up of properties contaminated by releases from underground storage tanks. Staff may conduct sampling to characterize materials under investigation.
  - State Site Remediation Program- Staff oversee the investigation and clean up of properties contaminated by releases of hazardous materials under the jurisdiction of RI state authorities. Staff may conduct sampling to characterize materials under investigation.
  - Brownfields Program- Staff oversee the investigation and clean up of properties contaminated by releases of hazardous materials that are proposed, or being prepared for, beneficial reuse. Staff may conduct sampling to characterize materials under investigation.
  - RCRA Compliance Section- RCRA staff conducts compliance monitoring on regulated hazardous waste management facilities and transporters. Staff may conduct sampling to characterize materials under investigation.
  - Solid Waste Compliance Section- Solid Waste staff conducts compliance monitoring on regulated solid waste management facilities and medical waste transporters. Staff may conduct sampling to characterize materials under investigation.

- Superfund Programs- Staff oversee the investigation and clean up of properties contaminated by releases of hazardous materials under the jurisdiction of the federal Superfund program. Staff may conduct sampling to characterize materials under investigation.

- Office of Water Resources

  - Total Maximum Daily Loading (TMDL) Program- Staff oversee the investigation of surface water bodies and develop a response strategy for impacted areas. Staff may conduct sampling to characterize materials under investigation and evaluate the effectiveness of corrective measures.
  - Ambient Water Quality Monitoring Program- Staff oversees contracts for monitoring and analysis of water quality in surface waterbodies.
  - User Fee Program – Staff conducts sampling of major RIPDES permittees to assess impacts to surface waters
  - Shellfish Area Monitoring Program - Staff conducts sampling of shellfish growing areas and potential pollution sources identified during shoreline surveys.
  - RIPDES Program – Staff may periodically conduct compliance sampling of permitted discharges to surface waters or municipal wastewater treatment facilities.
  - Wastewater Treatment Facilities Operations and Maintenance Program – Staff may periodically conduct compliance sampling of wastewater treatment facilities.
  - UIC Program – Staff may collect samples from groundwater discharge points or from groundwater monitoring wells.
  - Water Quality Certification Program – Staff may periodically conduct compliance sampling.

F. List of Key Personnel

All key personnel for the development and implementation of the QMP are located at DEM Headquarters, 235 Promenade Street. Providence, RI 02908. Key personnel include:

- Department of Environmental Management

  - Jan H. Reitsma, Director
    jreitsma@dem.state.ri.us
    (401) 222-2771

- Bureau of Environmental Protection

  - Alicia M. Good, P.E., Assistant Director for Water Resources
    agood@dem.state.ri.us
    (401) 222-4700 X7200
  - Terrence D. Gray, P.E., Assistant Director for Air, Waste and Compliance
    tgray@dem.state.ri.us
    (401) 222-4700 X2410

The DEM Quality team shall consist of the following personnel / positions. The Quality Team will meet on a quarterly basis to review issues of concern.

- Quality Assurance Manager
    - Thomas D. Getz, Ombudsman
      tgetz@dem.state.ri.us
      (401) 222-4700 X 2417

- Emergency Response Coordinator
    - Michael Mulhare, P.E., Supervising Engineer
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      (401) 222-4700 X7124

- Office of Air Resources
    - Stephen Majkut, P.E., Chief
      smajkut@dem.state.ri.us
      (401) 222-4700 X7010
    - Douglas McVay, Associate Supervising Engineer (Section Supervisor-Air Permitting)
      dmcvay@dem.state.ri.us
      (401) 222-4700 X7011
    - Barbara Morin, Supervising Environmental Scientist (Section Supervisor-Air Toxics)
      bmorin@dem.state.ri.us
      (401) 222-4700 X7012

- Office of Compliance and Inspection
    - Dean Albro, Chief
      dalbro@dem.state.ri.us
      (401) 222-4700 X7431
    - David Chopy, P.E., Supervising Engineer (Section Supervisor-Water Compliance)
      dchopy@dem.state.ri.us
      (401) 222-4700 X7257

- Office of Technical and Customer Assistance
    - Ronald Gagnon, P.E., Chief
      rgagnon@dem.state.ri.us
      (401) 222-4700 X7500
    - Richard Enander, Associate Supervising Engineer (Section Supervisor-Pollution Prevention)
      renander@dem.state.ri.us
      (401) 222-4700 X4411

- Office of Waste Management

    - Cynthia Gianfrancesco
      Principal Environmental Scientist
      cgianfra@dem.state.ri.us
      (401) 222-2797 X7126

- **Office Of Water Resources**

  Groundwater, Wetlands Protection

    - Russell Chateauneuf, P.E., Chief
      rchateau@dem.state.ri.us
      (401) 222-4700 X7700
    - Terry Simpson, Principal Environmental Scientist (Section Supervisor-Water Quality Certification and Underground Injection Control)
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      (401) 222-4700 X7602

  Surface Water Protection

    - Angelo Liberti, P.E., Chief
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      (401) 222-4700 X7225
    - Chris Turner, Principal Sanitary Engineer (Section Supervisor- Total Maximum Daily Loading (TMDL) Program)
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      (401) 222-3961 X7229
    - Eric Beck, P.E., Supervising Engineer (Section Supervisor-RIPDES)
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      (401) 222-4700 X7202
    - Warren Towne, PE, Supervising Engineer (Section Supervisor- Wastewater Treatment Facilities)
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      (401) 222-4700 X7247
    - Joseph Migliore, Principal Environmental Scientist (Section Supervisor - Shellfish Area Monitoring)
      jmiglior@dem.state.ri.us
      (401) 222-4700 X7258
    - Connie Carey, Principal Environmental Scientist (Section Supervisor)
      ccarey@dem.state.ri.us
      (401) 222-4700 X7239

G. Coordination of QA/QC Activities

The system outlined in this Plan, through the efforts of the QA Manager, will coordinate the various Office QA programs. The QMP is intended to be a dynamic document and will continue to be developed to ensure that the quality system is effectively implemented throughout the Bureau. This document will be copied and distributed to all appropriate program offices for their easy access and review. The Office Chiefs have direct access to both the program supervisors and project managers whenever specific QA problems arise. Chiefs will in turn adequately respond to identified program problems and needs (including resource aspects) and ensure their resolution. The QA manager will also coordinate quarterly meetings with the Quality Team to discuss specific issues that need to be resolved. Furthermore, the implementation of the Quality System may be reflected in the individual Professional Development Reviews undertaken annually with all Department senior management. This could reinforce and track the evolution of a coordinated and integrated quality system throughout the Bureau.

H. Delegation/Contracting of Programs and Technical Activities

The Department has had a decentralized approach for ensuring the quality of environmental data and information that is generated by outside entities under delegation agreements or contracts with the Department. These scopes of work are reviewed at the individual Office overseeing the project. Office Chiefs, and in some cases Section Supervisors within Divisions, who manage the work of outside entities have had primary responsibility for ensuring the quality of the data delivered under those agreements and contracts. The degree and formality of oversight of those entities will be examined as this QMP is implemented. It is expected that the audits and reviews employed by the QMP will apply to these situations. Furthermore, it is anticipated that the Office Chiefs will certify to the QA manager that the contracts and agreements conform to the generally accepted QA/QC procedures and requirements mandated by cooperative agreements with federal agencies.

III. Quality System Components

Our quality system provides a framework for planning, implementing, documenting, and assessing work conducted by the Bureau of Environmental Protection. The purpose of this system is to enable DEM to generate the type and quality of information required to fulfill our environmental mission.

The foundation of the quality system is management's commitment to quality and our QMP. Our quality policy reflects management philosophy on quality and stands as a guiding principle for our environmental data collection activities. It states that all personnel have responsibility for quality and with management support, will continually strive to build quality into work processes, products, and services.

Quality assurance addresses the planning of environmental projects, implementation of work activities, assessment of the process, and the results and feedback to the process. Quality control includes the scientific observations made and experimental results generated during the project.

Management provides policy definition, leadership, and oversight for the quality system. It also allocates resources to implement this quality policy.

The quality system for environmental monitoring, sampling, and measurement activities include the following components:

Component	Status
Quality Management Plan (QMP)	QMP finalized 4/17/02
Office Policies and Standard Operating Procedures (SOPs)	Compilation ongoing, Appendix C is the current compilation of DEM SOPs.
Quality Planning	Ongoing
Quality Assurance Project Plans (QAPPs)	In place or under revision/development-see Appendix B
Implementation	Ongoing
Program Audit System	Three draft SOPs developed, undergoing internal review. It is estimated that this process will take about six months.
Management Systems Reviews	Draft procedure developed
Training Program	Training inventory completed, training goals for 2004 established.

These principal tools are reviewed annually to address changes in the quality system. Suggestions for changes come from staff proposals for improvements and lessons learned from Division involvement in program activities.

A. Quality Management Plan

The QMP is an essential component of the quality system. It describes and documents the system, and is the plan used to implement the quality policy. It identifies what the Bureau does in quality management, and gives a rationale for why it is done. The QMP provides the basis for discussing changes and improvements to the quality system. All employees involved in environmental data generation activities will be required to read and be familiar with the QMP to ensure that they understand and are following the organization's quality management process. A copy of this plan will be available in each program for easy access to this document. Management also uses the QMP as a tool to gauge whether the quality system is being successfully implemented.

The QA Manager will be responsible for implementation of the QMP and reviewing the QMP at least annually to determine if it is up-to-date, accurately reflecting the DEM quality system, adequately ensuring quality throughout covered programs, and in compliance with current guidance and program requirements. Once updated, the QMP will be posted on the DEM Internet and all key personnel listed in Section II (F) will be notified of the revisions and will be given an opportunity to review and comment. Once this review period is complete, and comments have been evaluated and addressed, the QMP will be approved by signature of the Assistant Director

for Water Resources, the Assistant Director for Air, Waste, and Compliance, the QA Manager, and the Director (see Appendix C for Signature Page).

B. Office Policies and Standard Operating Procedures (SOPs)

Each Office has procedures, and in some cases written policies, designed to present general guidelines for planning investigations and collecting and developing admissible and defensible evidence in support of the environmental programs.

DEM has conducted an inventory of Standard Operating Procedures used in the programs. Appendix C is a compilation of all the current DEM SOPs. In addition the Quality Manager has developed a Standard Operating Procedure for the development and approval of SOPs that will be used in the programs. This inventory and all SOPs that are in an electronic format will be posted on the DEM Internet.

DEM has completed a listing of all policies used in the programs. This information is currently being posted on the DEM website. This is a comprehensive list and is not limited to quality assurance information. Policies and Standard Operating Procedures are developed on both a Departmental basis (typically for personnel, financial, legal, and other operational systems) and on the Divisional-level (typically for more program-specific purposes). In addition all policies and guidance that relate to quality management issues have been inventoried and are included in Appendix D.

Management is responsible for monitoring program performance and evaluating the adequacy and completeness of the policies, typically with significant input from staff. Personnel suggesting the change or having expertise in the area typically draft suggested revisions. Management will review the draft revisions for approval before implementation.

As the compendium of these policies and Standard Operating Procedures (SOPs) is developed, a gap analysis will be performed to determine if further policies should be established. Furthermore, an analysis of the merit and feasibility of integrating these policies will be conducted. When it is necessary to develop SOPs, the Bureau will consult EPA's Guidance for the Preparation of Standard Operating Procedures (G-6) (http://www.epa.gov/quality1/qs-docs/g6-final.pdf) to develop those procedures.

C. Quality Planning

Our quality goal is to conduct environmental measurements that meet the objectives of the program and/or project, which vary. To this end, we will ensure that the information generated is based on scientifically sound data and is supported by legally defensible documentation. The data quality-planning process describes the procedures developed to ensure that the environmental measurement activities conducted will be of the quality and types required to support enforcement actions. This process and its application in enforcement projects, involving both field and laboratory assistance will be described later in this document.

Section VIII of the QMP outlines the process for Quality Planning at DEM.

D. Quality Assurance Project Plans

A QAPP is used to describe the acceptance or performance criteria and QA/QC activities associated with any site investigation conducted, including but not limited to groundwater monitoring, air sampling, discharge monitoring, or site investigation. These may be generic to cover all planned site activities at a given facility or written for only one site-specific investigation. A QAPP may also be used for a special research or monitoring project with a definable beginning and end such as a stack test. All elements of a QAPP must be addressed for such a project.

Our goal is to ensure that all Quality Assurance Project plans will be reviewed based on the elements and information provided in the following guidance documents:

- EPA QA/R-5 EPA Requirements for Quality Assurance Project Plans (http://www.epa.gov/quality1/qs-docs/r5-interim-final.pdf), and,
- EPA QA/G-5 Guidance on Quality Assurance Project Plans (http://www.epa.gov/quality1/qs-docs/g5-final.pdf).
- EPA New England Compendium of Quality Assurance Project Plan Requirements and Guidance (http://www.epa.gov/region1/measure/qappcompendium.pdf)

A project manager may develop a project-specific QAPP based on a generic program QAPP. In these situations, the project manager will create a supplement to the generic QAPP that addresses the specific requirements of his/her project. The supplement will be reviewed and approved by the program supervisor and maintained in the project file.

Once the project-specific QAPP is approved, the project manager is responsible for ensuring implementation of the plan in the field. Project implementation will include the following information.

♦ Custody Documents – Includes chain-of-custody forms when necessary, receipt for sample forms, and sample tags.

♦ Field Notes- A detailed record of when, where (including site maps), how, and who took each sample. The results of associated field measurements, field calibration results, and background-monitoring readings are recorded. Other factors that might affect sample quality or interpretation of results, such as ambient temperature and climatic conditions, may also be recorded in the logbook. In addition, a photographic log maybe maintained where appropriate.

♦ Appropriate personnel take Field Photographs – a visual record of site conditions, processes, samples and sample source.

♦ Standard Procedures – Procedures used for routine activities associated with sampling and field and analytical measurements. The project manager is responsible for ensuring that the procedures are understood and followed in the field, and that deviation from these procedures are approved and documented.

- Data Quality Requirements and Sample Analytical Strategies – Acceptance or performance criteria that support the overall objective of the investigation, are defined for monitoring, sampling, and analyses. The type and number of samples collected must be appropriate to achieve the level of accuracy required by the investigation. The sample preparation and laboratory analytical test methods, QC requirements, and data deliverables are approved and agreed to in writing before sampling. Data quality objectives should be developed consistent with the guidance provided in EPA's Guidance for the Data Quality Objectives Process (G-4) (http://www.epa.gov/quality1/qs-docs/g4-final.pdf).

The QA Manager has developed a protocol to review projects and programs to ensure compliance with the Quality System (see Project Audits). This protocol is currently under review. It is anticipated that this draft protocol will be finalized in six Months. (March 2004)

E. Implementation of the Quality System

On the system level, the first step in implementation has been the development of the QMP. Development of the QMP has led to the identification of persons across the regulatory programs who have responsibilities and expertise in assuring quality in their particular programs The Quality System will facilitate communication and interaction between these individuals for sharing information and mutual aid in problem-solving.

In developing this document a number of gaps were identified and include:

- Additional work is needed to develop policies to ensure data integrity in databases. This is a major effort, and the DEM Office of Management of Information Systems is aware of the issue and will be working on this issue.
- DEM staff needs to be trained in conducting project audits and Management System Reviews.

F. Project Audits

From time to time, the section supervisors will perform project audits. Audit procedures are under review. One gap that needs to be addressed is training of DEM personnel to perform these audits. Region I has been requested to assist DEM in this training. Audits ultimately will be based on the following:

Audits of QAPPs - Before the plan is put into effect, the program supervisor will review the plan to evaluate the adequacy of facilities, equipment, supplies, personnel, and existing procedures to meet project objectives. Findings of the audit, including any deficiencies, inadequacies, or systematic problems will be discussed with the project management and Department senior management who will collectively decide how to respond to the findings.
Quality Control Indicators - During the project, personnel may use quality control indicators to identify problems with sampling and/or analytical procedures and to highlight anomalous results. Quality control indicators can include blanks, standard reference materials, QC check samples, replicates, spikes, and alternative methods. Problems that are identified are documented in the project file and should be discussed with the program supervisor. They may decide how to

respond to the problems together, or after consultation with the Chief and/or appropriate Assistant Director.
Data Assessments- Data must be assessed to determine its usability in meeting the project goals and objectives. This will be done based on the data quality objectives of the project and the data deliverables provided as specified in the QAPP for the investigation. The project audit must ensure that data is being assessed correctly, at a minimum in accordance with the guidelines specified in Section VIII (B) (6) of the QMP.

When a project is concluded, the work product is evaluated for completeness, accuracy, and appropriateness to meet the project objectives. The procedures used and the documents generated are evaluated for adherence to policies and standard operating procedures. The QA Manager in collaboration with the Quality Team, will also develop a protocol to review projects and programs to ensure compliance with the Quality System.

G. Annual Management Systems Reviews

A management systems review will be conducted at least annually, in conjunction with the review and update of program work plans and negotiation of the Performance Partnership Agreement. A Management System Review has been drafted and is under internal review. It is anticipated this review will take about six months and should be complete in March 2004. The Management System Review will gauge whether the quality system is being successfully implemented and to identify opportunities for improvement. This review identifies patterns or issues that can affect project commitments or performance quality. The QA Manager and the Quality Team will select individuals to conduct an independent management systems reviews. These reviews provide an independent qualitative assessment to determine whether the program quality system, policies, procedures, and practices adequately address generating the type and quality of data required. Those reviews are predicated on DEM staff receiving training in this discipline.

H. Quality System Training Program

The QA Manager with collaboration from the Quality Team, is responsible for developing a training program to inform and educate staff on the QMP and the QA system. Each office will be responsible for ensuring their staff is appropriately trained. The QA Manager will coordinate these activities to ensue that training resources are being efficiently used.

The Quality Manager conducted two surveys (September 2003, and again in May 2003) of the quality team to determine training needs for the agency. Appendix E and F are the results of this survey. This information was forwarded to EPA, Region 1 and because of this information EPA conducted a successful training exercise in Rhode Island on June 25, 2003. EPA has also agreed to conduct an additional training opportunity in September on the issue of VOC's.

Another topic that was raised was the need for DEM to receive training in the area of project and program audits. DEM personnel do not have experience in this area. In order for the quality approach to be successful, DEM employees will need to be trained in this area.

IV. Personnel Qualification and Training

A. Personnel Qualifications

Assurance that all staff members are qualified and meet the required job specifications, DEM must follow and adhere to State's and Department's *Personnel Rules and Regulation,* as well as to union contracts. Personnel qualifications are established by the Position Classification Plan, which describes the job specifications and the education and /or experience necessary to fill that position. All job applications are reviewed by the Department's Office of Human Resource to ensure applicants meet the minimum job requirements. Managers within the program, interview qualified applicants to assess their compatibility with that program.

B. Commitment to Training

In order to meet the Department's Commitment to Quality (outlined in Chapter 1 previously), DEM will provide adequate training to key personnel in the applicable policies, procedures, and requirements of maintaining a quality system at all levels in the Bureau. Training will at least be consistent with the role of the individual in the overall quality system and may be more comprehensive.

C. Overall Description of Personnel Training

The Bureau does not currently have a formal, comprehensive training program on quality or quality systems. The Divisions currently arranged training primarily on an ad hoc basis dependent on need, funding and availability. Overall, availability of training is heavily dependent on the availability of courses from EPA, Interstate Organizations (NEWMOA, NEIWPCC, NESCAUM, ASTSWMO, etc.), and, to a much lesser extent, private training companies.

The following is a sampling of courses that have been coordinated through some of these organizations:

ASTSWMO
RCRA Info National User Conference
Natural Resource Damage Workshop

EPA
Sampling for Hazardous Materials
Environmental Risk Assessment
Personnel Protection and Safety
Passive Diffusion Sampling Training
California Puff Model Training Course
National Association of Remedial Project Managers
RCRA State Authorization Workshop
Enforcement and Compliance workshop

NEEP
Field Investigations training course

NESCAUM
Air Toxics workshop (co-sponsored with EPA)
Inspection of Gas Control Devices training
MTBE Task Force
Stationary Source and Permits committee

NEWMOA
Annual Training and Technology Transfer Conference
Advanced Hazardous Waste Inspector training conference

OTC
Communications Committee meeting for 2002 in the ozone Transport region
Practical pathways to Energy and Environmental Coordination in the New England/Mid-Atlantic States
OTC Mobile Source committee

SERC
National Conference on Above Ground Storage Tanks

The primary mechanism for training staff on quality issues in our programs is through on-the-job training and informal education and mentoring from more experienced and/or senior staff members.

There may be a need to develop a more coordinated training program to discuss quality issues across Bureau programs. As this QMP is initially implemented and evaluated, the need for training will be closely watched. It is expected that we will develop a short training session on the QMP itself as it is finalized. When developing training, DEM intends to consider the guidance provided in EPA's Guidance for Developing a Quality Assurance Training Program (G-10) (http://www.epa.gov/quality1/train.html) and incorporate relevant and appropriate sections.

D. Roles, Responsibilities and Authorities for Assessing and Allocating Training

As stated earlier, the Department has historically had a decentralized approach to ensuring quality in environmental data including training staff. Office Chiefs, and in some cases Section Supervisors within Divisions, have had primary responsibility for implementation of their programs, including ensuring adequate training of staff. The establishment of the Department's Training Committee has significantly supplemented these efforts. The training committee surveys employees and managers both through stand-alone surveys and exit questionnaires at the end of sessions to determine training needs and desires and then works to arrange that training session.

The DEM training committee has presented or coordinated the following courses: Witness Preparation, Stress Management, Quality Customer Service, Working with the Media, Open Meetings and Public Records Laws, Myers-Briggs Training, Workplace Violence Training, various computer training courses, Professional Feedback, Teambuilding, Diversity Training, and Time Management.

The training attended by DEM employees, both internal training sponsored by DEM and training provided by outside organizations, is tracked on a monthly basis by the Office of Human Resources (OHR) as part of the implementation of DEM's Equal Employment Opportunity (EEO) Plan. Forms are sent to each Division Chief on a monthly basis and completed forms are returned to OHR for tracking.

V. Procurement of Items and Services

Procurement ranges from general supplies to highly sophisticated scientific equipment that directly affects the quality of environmental measurements. Within the Bureau, identified equipment needs are submitted to Chiefs and/or Assistant Directors who evaluate, prioritize, and make decisions on items for proposed procurement in accordance with the need for the materials, the program budget, grant requirements and State purchasing system requirements. The Office of Management Services reviews each proposed purchase to check consistency with the Department's budget, grant requirements and State purchasing systems.

A. Description of State Procurement System

The Department of Environmental Management operates under statutory authority granted under the State purchasing law, chapter 37-2. This procurement statute, administered by the purchasing division in the Department of Administration, sets the standards for all state agencies for the procurement of goods and services. The legislation and regulations prohibit state agency administrators from committing funds or entering into agreements without the **express** written authorization of the Chief Purchasing Officer. Every State Agency Director must be familiar with the regulations and must indoctrinate personnel in their implementation.

DEM can make purchases under the master price agreement goods and services without going to a formal bid process. Departments can also make purchases of up to $2,500 within the department. All purchases over $1,000 must have three written vendor quotations and be approved by DEM's Chief of Management Services. The Chief of the division can directly authorize purchases of less than $250. Purchases over $250 to $1,000 need three telephonic quotations before a DPO can be issued.

In addition, any procurement over $5,000 needs state budget Officer approval before going to purchasing. Purchase of Technology related items exceeding $5,000 also require budget approval and any procurement of personnel and professional services require the state budget officer.

All invitations for bids and requests for Proposals (RFP) are governed by sections 42-11 and 37-2 of the general laws of RI. The law establishes requirements for vendors who wish to provide

goods and services to the state and pertains both to suppliers of goods and suppliers of contracted services.

The Division of Purchasing can also delegate authority to purchase to a department. Delegation allows the department to directly negotiate an agreement or contract with the federal government, other state or quasi state agencies or that the department has adequately addressed the issue of sole/single source procurement. All contracts with Universities or state colleges must use the sole source justification before a purchase order is issued. All other contracts must follow a standard requisition and proposal and will be issued a purchase order by the State Controller after approval of Purchasing.

All Technical proposals go through a review committee at the State division of Purchasing.

B. Contracts

An Office may individually, or in coordination with other Offices, recommend that the Department (and the State) contract for certain work elements subject to the process outlined above. Examples of major contracts administered in the Bureau include:

- Emergency Response Services Contract (Office of Compliance and Inspection)
- Laboratory Services Contract (Office of Compliance and Inspection)
- Technical Assistance Contract (Office of Waste Management)
- Contract with University of Rhode Island on Pollution Prevention Assistance (Office of Technical and Customer Assistance)
- Contract with University of Rhode Island on Small Business Assistance (Office of Technical and Customer Assistance)
- Agreement with Department of Health Laboratory to analyze air samples (Office of Air Resources)
- Agreement with Department of Health Laboratory to analyze water samples (Office of Water Resources)
- Agreement with URI on Ambient Water Quality Monitoring (Office of Water Resources)
- Agreement with USGS on Ambient Water Quality Monitoring (Office of Water Resources)

The Department of Environmental Management does not have its' own laboratory and is almost completely reliant on the Department of Health lab and contract laboratories for analysis of samples. Laboratories are required to follow specific procedures outlined in applicable regulations, policies and/or standard operating procedures when analyzing these samples. These requirements often directly reference EPA protocols.

This also includes analysis of split samples taken by DEM staff during inspections or investigations.

When warranted, special analytical services and criteria, including data quality consistent with EPA's Contract Laboratory Program (CLP) can be specifically requested of the contract laboratory.

C. Ensuring the Quality of Items Purchased

Needs are identified and submitted to Chiefs and/or Assistant Directors who review, prioritize, and decide on the items for proposed procurement. The Office of Management Services reviews each proposed purchase to check consistency with the Department's budget, grant requirements and State purchasing systems. Once an item is approved and purchased, it is delivered to the program that initially submitted the request and checked against their needs and expectations. The equipment is then operated and maintained by that program, or their designee.

All Invitations for Bids (IFB), Requests for Proposal (RFP) and extramural agreements or contracts for goods or services, except contract between state agencies, will be governed by the provisions of the Rhode Island General Laws (RIGL) § 42 - 11, entitled Department of Administration and § 37-2, entitled State Purchases. These laws set requirements for vendors who wish to provide goods and services to the state and pertain both to suppliers of goods and suppliers of contracted services. Equipment is purchased in several ways. For many items, especially equipment and supplies such as office supplies, that are routinely and frequently bought by state agencies, vendors bid on the contract and the selected vendor(s) enter into master contracts for a period of time. State Agencies must purchase supplies from those vendors. For all other purchases, state agencies must follow the state bid process.

D. Ensuring the Quality of Work from Pass-Through Agreements, Grants, MOUs, etc.

As stated earlier, the Department has historically had a decentralized approach to ensuring quality in environmental data, including data generated by outside entities under delegation agreements or contracts with the Department for certain scopes of work. Office Chiefs, and in some cases Section Supervisors within Divisions, overseeing the work of that outside entity, be it a consultant, contractor, citizen group or non-governmental organization, have had primarily responsibility for ensuring the quality of the data delivered under those agreements and contracts. The degree and formality of oversight of those entities will be examined as this QMP is implemented but it is expected that the audits and reviews defined later in this Plan will apply to these situations.

All Invitations for Bids (IFB), Requests for Proposal (RFP) and extramural agreements or contracts for pass-through agreements for services, except contract between state agencies, will be governed by the provisions of the Rhode Island General Laws (RIGL) § 42 - 11, entitled Department of Administration and § 37-2, entitled State Purchases. These set requirements for vendors who wish to provide goods and services to the state and pertain both to suppliers of goods and suppliers of contracted services, include those contracted for pass-through services.

The Department of Administration Office of State Purchase and State Property is charged with the procurement of services. All quality control is the responsibility of the State Purchasing Office, although this Office relies heavily on input and comments from the initiating agency.

For laboratory services, guidelines have been developed by the US EPA, which describes the minimum requirements of facilities, equipment, and personnel that must be met to conduct

chemical and microbiological analysis for compliance monitoring.

QA/QC provisions will be made a requirement of every IFB, RFP or any contract for goods or services, which will involve the creation, evaluation, or analysis of environmental data.

Proposals received in response to an IFB or RFP will be evaluated on the ability of the proposer to meet the established QA/QC requirements. No agreement will be entered into when the proposer or cooperating entity cannot meet the QA/QC provisions. QA/QC requirements will be made a provision of all contracts, MOUs, MOAs, and other final agreements, as appropriate. The project manager, under the oversight of the program supervisor, will monitor all work performed under a contract, MOU, MOA or other agreement to ensure that all QA/QC provisions are satisfied. Payment for goods and services will not be made when established QA/QC provisions have not been met.

VI. Documentation and Records

A. Documents and Records Maintained by the Regulatory Programs

The regulatory programs within DEM rely on many types of information to make decisions. The entire process is documented and maintained through the administrative files managed by each program. Examples of the types of records and documents stored and maintained in those files are: records of complaints filed with the Department, custody documents, field notes, photographs, internal memoranda, field investigation and complaint response reports, correspondence both to and from the Department, site plans, sampling and investigation plans, results of sample analysis, site-specific and/or project-specific quality assurance and quality control documents, and reports.

Files are typically maintained in the area adjacent to the various programs throughout our office space. Some files are archived into the Department's storage space in the basement of our office building, typically based on space constraints in the office space.

The Department has developed a records management policy. This policy:

- Defines the records management responsibility of both management and employees throughout the agency.
- Defines what constitutes an official record.
- Establishes a clear policy for retention of records, which should address creation / collection, record maintenance and use and record disposition, i.e., storage, archiving and destruction of departmental records.
- Defines protocols for the destruction of obsolete records.
- Establishes a training protocol that will be used to disseminate information and train designated divisional personnel in the management of records according to the DEM. Training will commence in the Fall of 2003 on implementation of this policy.

B. Key QA-Related Documents

The quality system for environmental monitoring, sampling, and measurement activities include the following components:

- ♦ Quality Management Plan (QMP)-Prepared and maintained by Quality Assurance Manager, and provided to each Office
- ♦ Office Policies and Standard Operating Procedures (SOPs)-Prepared and maintained by Office Chief and Section Supervisors and provided to Assistant Directors and appropriate project managers
- ♦ Quality Assurance Project Plans (QAPPs)-Prepared and maintained by project managers in the project file.
- ♦ Project Audits-Prepared under the direction of, and maintained by, the Quality Assurance Manager, Office Chief and/or Section Supervisors and provided to the Assistant Directors and project manager. The product of the project audit should be a written report or memoranda documenting the audit process, findings, and recommendations. Copies of this report should be provided to the appropriate Assistant Director and Division Chief, and should be maintained in the project file.
- ♦ Management Systems Reviews- Prepared under the direction of, and maintained by, the Quality Assurance Manager and./or the Assistant Directors and provided to the Director and each Office. The product of the management system review should be a written report or memoranda documenting the review process, findings, and recommendations. Copies of this report should be provided to the appropriate both Assistant Directors, should be considered in the annual review of the QMP, and should be maintained in the quality system files by the QA manager

C. Preparing, Updating and Approving QA-Related Documents

1. Quality Assurance Project Plans

All Quality Assurance Project plans should be prepared in accordance with the requirements outlined in the following guidance documents:

- EPA QA/R-5 EPA Requirements for Quality Assurance Project Plans (http://www.epa.gov/quality1/qs-docs/r5-interim-final.pdf), and,
- EPA QA/G-5 Guidance on Quality Assurance Project Plans (http://www.epa.gov/quality1/qs-docs/g5-final.pdf).
- EPA New England Compendium of Quality Assurance Project Plan Requirements and Guidance (http://www.epa.gov/region1/measure/qappcompendium.pdf)

QAPPs will be prepared by project managers and will be reviewed by the Section Supervisors, and when appropriate by the QA Manager or Senior Management. QAPPs are maintained in the project file.

2. Project Audits

Section supervisors or their designees (independent from the project) will perform project audits of QAPPs from time to time. The QA Manager in collaboration with the Quality Team, will also develop a protocol to review projects and programs to ensure compliance with the Quality System. Findings of the audit, including any deficiencies, inadequacies, or systematic problems will be discussed with the project management and the Quality Team at the quarterly meeting. The recommendations of the Quality Team will be reviewed and acted on by the Department senior management.

When a project is concluded, the work product is evaluated for completeness, accuracy, and appropriateness to meet the project objectives by the section supervisor. The procedures used and the documents generated are evaluated for adherence to policies and standard operating procedures.

The product of the project audit should be a written report or memoranda documenting the audit process, findings, and recommendations. Copies of this report should be provided to the appropriate Assistant Director and Division Chief, and should be maintained in the project file.

3. Annual Management Systems Reviews

A management systems review will be conducted at least annually, in conjunction with the review and update of program work plans and negotiation of the Performance Partnership Agreement. The QA Manager has developed a protocol to review projects and programs to ensure compliance with the Quality System. It is anticipated this procedure will be finalized in six months. The Management System Review will gauge whether the quality system is being successfully implemented and to identify opportunities for improvement. This review identifies patterns or issues that can affect project commitments or performance quality. The QA Manager and the Quality Team will select individuals to conduct an independent management systems reviews. These reviews provide an independent qualitative assessment to determine whether the program quality system, policies, procedures, and practices adequately address generating the type and quality of data required. These reviews are predicated in DEM staff receiving training on how to conduct these reviews.

The product of the management system review should be a written report or memoranda documenting the review process, findings, and recommendations. Copies of this report should be provided to the appropriate Assistant Directors, should be considered in the annual review of the QMP, and should be maintained in the quality system files by the QA manager.

D. Document Storage

DEM retains its' records in files that are maintained by the individual Offices and programs. Those Offices and programs have the discretion to archive files, or in some cases, dispose files based on space constraints and their own standard operating procedures. Findings of audits and chain-of-custody forms are maintained in the project files. As stated earlier, in some Offices, a file management system includes an inventory of documents, and provides a check-in/check-out and file location information.

A unique identification case code is being developed as part of a comprehensive computerized permit tracking system. It is expected that this system may lead to a consolidated file system in the future.

Custody tags, custody records, field notes, and analytical records are maintained in project files. The Project manager is responsible for assuring that field and analytical records are in the project file.

E. Confidentiality Policy and Access to Public Records

Section 38-2-3 of the Rhode Island General Laws outlines the requirements for maintenance of, and access to, public records. The law can be reviewed on-line at http://www.rilin.state.ri.us/Statutes/TITLE38/INDEX.HTM.

F. Roles, Responsibilities and Authorities for Maintaining Records

Office Chiefs are responsible for developing standard operating procedures for the retention of records maintained in the individual Offices and programs. Draft retention schedules have been developed for all Offices in the Bureau of Environmental Protection. It is the intention of the Bureau to finalize this process by October 2003. Once finalized, the retention schedules will be submitted to the Secretary of State for review and approval. Once the retention schedules are approved, the frequency for archiving files or disposing of files will be established.

VII. Computer Hardware and Software

The Department has historically had a decentralized approach to purchasing computer equipment, instituting software and developing databases. All this significantly changed, however, when DEM committed to the development and implementation of a multi-media, comprehensive permit and information tracking system. Now, information technology needs are identified and submitted to Chiefs and/or Assistant Directors who review, prioritize, and evaluate the proposals. Each proposal must also be reviewed by the Information Management Unit to ensure consistency and compatibility with Department's systems. The Office of Management Services also reviews these proposals to check consistency with the Department's budget, grant requirements and State purchasing systems. Once purchased, Office Chiefs, and in some cases Section Supervisors within Divisions, must work with staff from the Information Management Unit to install, develop and/or implementation the items.

A. DEM Standards and Criteria

Since each proposal must also be reviewed by the Information Management Unit to ensure consistency and compatibility with Department's systems, they have established a set of standards and criteria for purchases of equipment related to information management and technology.

Minimum standards for desktop computers and laptops require at least a Pentium microprocessor with speed greater than 400 MHz, at least 64 MB RAM, 4 GB hard drive capacity, a CD Drive, super VGA 800 X 600 video, a 15" monitor, a PCI bus and a network interface. There is also a list of software supported by the State Office of Libraries and Information Services, which includes the Windows 95 and Windows 2000 operating systems (not Windows 98 or ME). Our permit streamlining and information tracking system will use an Oracle enterprise system.

B. Assessment of Databases

DEM and its' contractor, KPMG, conducted a comprehensive assessment of all databases used in the regulatory programs as part of the development of the permit and information tracking system. The findings of this evaluation are outlined in a comprehensive report titled "Permit Application Process Streamlining Study", Final Report, July 30, 1997. This report is maintained in the Information Management Unit Office at DEM. The results of this analysis were used to evaluate the workflow in these programs and serve as a basis for the design of a more robust, multi-program system. Many of these databases are being integrated into, and replaced by, the comprehensive system under development by Kyran Associates, under contract to DEM.

We are currently purchasing and implementing the EQuIS system, to store environmental data in the waste management and site remediation programs. Based on the experience with the waste management and site remediation programs, DEM may upgrade to an enterprise version of this software available to all regulatory programs. Any data system that is used for the storage of environmental data will be compatible with the central permit and information tracking system.

C. Maintenance of Data Integrity

The maintenance of data integrity currently remains a decentralized task for now. Office Chiefs or their designees have the primary responsibility for ensuring data integrity within their programs. These responsibilities will likely shift, at least partially, to the MIS unit as the comprehensive permit streamlining system is installed. At a minimum, policies and procedures for ensuring data integrity must be developed and implemented.

VIII. Planning

A. Commitment to Systematic Planning

In order to meet the Department's Commitment to Quality (outlined in Chapter 1 previously), we must develop and maintain a planning process to ensure our systems remain effective and meet current policies and requirements. This planning process will include the reviews and checks outlined in Chapter 2 previously and will strive to continuously improve our quality system. The most effective planning process for our quality system will be seamlessly integrated with the existing planning processes already in place.

Primarily, annual management systems reviews conducted in conjunction with the review and update of program Work Plans and negotiation of the Performance Partnership Agreement will drive the planning process. The Management System Review will gauge whether the quality system is being successfully implemented and to identify opportunities for improvement. These reviews provide an independent qualitative assessment to determine whether the program quality system, policies, procedures, and practices adequately address generating the type and quality of data required.

B. Systematic Planning Process

1. DEM's Work Plan and the Performance Partnership Agreement

Every two years, the Department develops a comprehensive Work Plan outlining the specific program objectives, tasks, and measures to be implemented in each program. The Work Plans are developed for a two-year period, but have a mid-point adjustment built in at the end of the first year. As stated above, the planning process for our quality system will be done in conjunction with, and be integrated into, the existing planning processes already in place.

The development of the Work Plan was driven by several factors, including:

- The need to respond to issues and concerns raised publicly about the Department's performance in such areas as accountability, efficiency, effectiveness, responsiveness and customer- friendliness;
- The need to become more result-oriented, i. e. to design and implement programs that produce actual environmental improvements, and then, as much as possible, to evaluate
- and report on our performance in terms of such environmental results instead of the traditional "bean- counting;"
- The need to translate policy concepts such as pollution prevention, permit streamlining, watershed management and smart growth into more specific strategies and program activities;
- The need to prioritize the Department's activities and use of limited resources; and
- The need to improve staff morale, motivation and productivity, and to hold managers accountable for producing measurable results.

The Work Plan overlaps in part with the Performance Partnership Agreement (PPA), which governs DEM's use of federal grants provided by the Environmental Protection Agency (EPA)

for certain Air, Water, Waste Management, and Pesticide programs. Clearly, the need for quality information is closely aligned with the driving forces behind the development of the work plan process.

The DEM Work Plan and PPA are dynamic documents that reflect the goals, objectives, strategies, tasks, and targets of the Department and its' individual programs. The Work Plan can be referenced on the Internet at: http://www.state.ri.us/dem/pubs/plan2002/invite.htm and is incorporated into the QMP by reference.

2. Project Planning

In our Work Plans and the Performance Partnership Agreement with EPA, we commit to certain inspections, investigations, and other activities. Quality Assurance Project Plans (QAPPs) are site specific and must be generic, to some degree, to cover the basic recurring activities of field investigation and laboratory analysis. If we agree to undertake a specific approach to certain projects or contaminants, then a more detailed QAPP for that project may be appropriate.

The section supervisors and project managers develop, or oversee development of, a preliminary plan for accomplishing the requested work. Through this process, specific individuals are made accountable for different aspects of the investigation.

The initial planning process takes into account:

- Identifying the regulations involved.
- Defining the requirements of the regulations.
- Structuring communication between all the parties involved in the project.
- Defining the scope of the project to meet compliance objectives.
- Identifying and scheduling activities.
- Identifying resources needed.
- Identifying health and safety issues.
- Determining parameters of concern, and concentration ranges of concern.
- Defining methodologies appropriate to these parameters and ranges.
- Defining performance or acceptance criteria for the selected methods.
- Assessing any procedures used for the evaluation and analysis of data for suitability and representativeness.

The status of the various QAPPs developed, or requiring development, is listed in Appendix B of the QMP. A project manager may develop a project-specific QAPP based on a generic program QAPP. In these situations, the project manager will create a supplement to the generic QAPP that addresses the specific requirements of his project. The supplement will be reviewed and approved by the program supervisor before the initiation of fieldwork and is maintained in the project file. Once the project-specific QAPP is approved, the project manager is responsible for implementing the plan in the field. The QA Manager, in collaboration with the Quality Team, will also develop a protocol to review projects and programs to ensure compliance with the Quality System (see Project Audits).

3. Sampling

When sampling activities are necessary, they are focused toward meeting the regulatory and technical requirements defined during planning. Sample collection is designed to answer questions such as:

- What are the appropriate test methods to be used? EPA's ESC Analytical Test Methods Collection (http://www.epa.gov/reg3esd1/oasqlib/methods.htm) provides excellent information on EPA approved test methods
- How does the material compare to a regulatory threshold?
- How does the material compare to another material?
- Is a component/condition present?
- Are there trends or hot spots?

The sampling activities typically require:

- Coordinating field activities with laboratory activities.
- Maintaining sample integrity.
- Focusing on regulatory and program defined data quality requirements.

Planning activities should address these issues.

4. Split Samples

Split samples are samples from the same monitoring time and location that have been divided into two aliquots. These two aliquots may then be sent to two different laboratories (or to the same laboratory) for analysis for the same parameters using the same analytical method. Split samples will give a good indication of variability and precision. This can be a means of determining false positives or negatives. Other controls for false positives and false negatives are laboratory QC data such as surrogates, matrix spikes, blanks, and laboratory control samples.

Split samples are taken at the discretion of the project leader or management personnel based on the sensitivity and importance of the sampling event and should be described in the QAPP.

5. Analysis of Samples

Sample analysis involves the characterization of materials based on chemical or physical properties. Analysis results in generating raw data from instrumental analysis, chemical analysis, or physical testing. The analytical methods used shall be specific and sensitive enough to answer the question posed by the project objectives and meet the data quality objectives. This will be assured by conformance to QAPP's and SOP's developed and approved according to the guidelines presented in this document.

Once results are received, the raw data is translated into qualitative identifications, quantitative determinations, and/or statements of condition, in other words, into useable information. This process will include arithmetic calculations and statistical evaluation of results for a sample or

collection of samples. Translation of data will be performed in accordance to QAPP's and SOP's developed and approved according to guidelines presented in this document.

6. Data Assessment and Comparison of Results against Established Criteria

Data must be assessed to determine its usability in meeting the project goals and objectives. This will be done based on the data quality objectives of the project and the data deliverables provided as specified in the QAPP for the investigation.

For groundwater sampling, the data would be assessed by the project manager based on historical trends from the facility and compared against standards listed in the Rules and Regulations for the Investigation and Remediation of Hazardous Materials Releases and/or the Groundwater Quality Regulations.

For soil samples collected as part of a corrective action investigation, a project manager will usually assess the data and compare it against standards listed in the Rules and Regulations for the Investigation and Remediation of Hazardous Materials Releases.

For surface water sampling, a project manager will usually assess the data and compare it against standards listed in the Water Quality Regulations.

For air sampling, samples are compared to national standards for various air pollutants including, but not necessarily; limited to: National Emission Standards for Hazardous Air Pollutants (NESHAPS), National Ambient Air Quality Standards for ozone, and standards for carbon monoxide, nitrogen oxides, sulfur dioxide, lead and particulate matter.

IX. Implementation of Work Processes

A few gaps currently exist in the DEM QMP. DEM has made major progress in implementing the Quality Management Plan. This revised QMP documents this progress. It is the intention of the Department that this plan will unify the process and eliminate some of the redundancies of taking a program by program approach.

Development of a DEM QMP is a new task and will undergo constant revision. New SOPs and QAPPs are constantly being developed. In addition there will be addition program gaps found when program audits are initiated. This is a natural part of the Quality system. The Quality Team is starting to work as a unit and the process will become refined as time goes on and people become familiar with the system.

The Quality Manager, in collaboration with the Quality Team will review this plan on a yearly basis and will continue to fill gaps of this plan. With respect to this section three primary objectives need to be accomplished.

A. Ensuring Work Is Performed Using QMP Principles

DEM will ensure that work is performed according to quality management principles in two primary ways:
DEM will establishment of a process for Management Systems Review. This process will ensure that technical documents are reviewed and developed that will meet pertinent QMP standards. The next step of the process is to make employees aware of the requirements of the QMP. The development and establishment of an employee-training program on quality program elements will achieve this goal.

B. Identification of Operations Needing Procedures

DEM is in the process of posting all appropriate policies and program guidelines on the state website. This QMP also lists an inventory of SOPs, QAPPS and Policy and Guidance documents that are used in the quality process. In addition DEM has developed SOPs that formalizes the process to develop QAPPs, SAPs and SOPs. DEM has made a lot of progress in the last year and will continue to do so. These systems will help to improve DEM capability of ensuring overall data integrity in our programs.

C. Document Control

Document control policies will be reviewed to determine the DEM's procedures for the control, use and development of document. This review will determine if DEM will need to develop consistent policies on management of documents and records.

X. Assessment, Response and Quality Improvement

A. Commitment to Assessment, Response & Quality Improvement

Meeting the Department's Commitment to Quality requires a commitment to continuously improve the quality system in the Department and respond quickly and effectively to any problems or shortcomings uncovered in the assessment processes. As explained earlier, we must develop and maintain a planning process to ensure our systems remain effective and meet current policies and requirements. This planning process will include the reviews and checks outlined in Chapter 2 previously and will strive to continuously improve our quality system.

The first step in developing and implementing a quality system throughout the regulatory programs within DEM is the establishment of this QMP and moving forward with the implementation elements outlined in Section III (A)(5). This chapter of the QMP describes the processes to be implemented to ensure that the Quality System is sustainable once it has been established.

B. Assessment Processes

The assessment process will include the reviews and checks will include project-specific audits and annual management reviews of the entire quality system. The QA Manager, in collaboration with the Quality Team, will establish training and education requirements for personnel

conducting audits and management system reviews as part of the quality system training program.

1. Project Audits

From time to time, the section supervisors will perform project audits. Audits will be based on the following:

- Audits of QAPPs - Before the plan is put into effect, the program supervisor will review the plan to ensure that data assessments were properly conducted and the data was reconciled with the project objectives and data usability criteria. The project audit will also evaluate the adequacy of facilities, equipment, supplies, personnel, and existing procedures to meet project objectives. Findings of the audit, including any deficiencies, inadequacies, or systematic problems will be discussed with the project management and the Quality Team at the quarterly meeting. The recommendations of the Quality Team will be reviewed and acted on by the Department senior management.

- Quality Control Indicators - During the project, personnel may use quality control indicators to identify problems with sampling and/or analytical procedures and to highlight anomalous results. Quality control indicators can include blanks, standard reference materials, QC check samples, replicates, spikes, and alternative methods. Problems that are identified are documented in the project file and should be discussed with the program supervisor. They may decide how to respond to the problems together, or after consultation with the Chief and/or appropriate Assistant Director.

When a project is concluded, the work product is evaluated for completeness, accuracy, and appropriateness to meet the project objectives. The procedures used and the documents generated are evaluated for adherence to policies and standard operating procedures.

2. Annual Management Systems Reviews

The QA Manager will coordinate an annual management systems review in conjunction with the review and update of program work plans and negotiation of the Performance Partnership Agreement. The Management System Review will gauge whether the quality system is being successfully implemented and to identify opportunities for improvement. This review identifies patterns or issues that can affect project commitments or performance quality. The QA Manager and the Quality Team will select individuals to conduct the reviews. This will provide a level of independent oversight by conducting management systems reviews. These reviews provide an independent qualitative assessment to determine whether the program quality system, policies, procedures, and practices adequately address generating the type and quality of data required.

3. Documentation and Reporting of Assessments to Management

Each office will document findings of the project audits, including any deficiencies, inadequacies, or systematic problems and the QA Manager will prepare a summary report. This report will be discussed with the Quality Team and forwarded to the Department senior

management who will collectively decide how to respond to the findings.

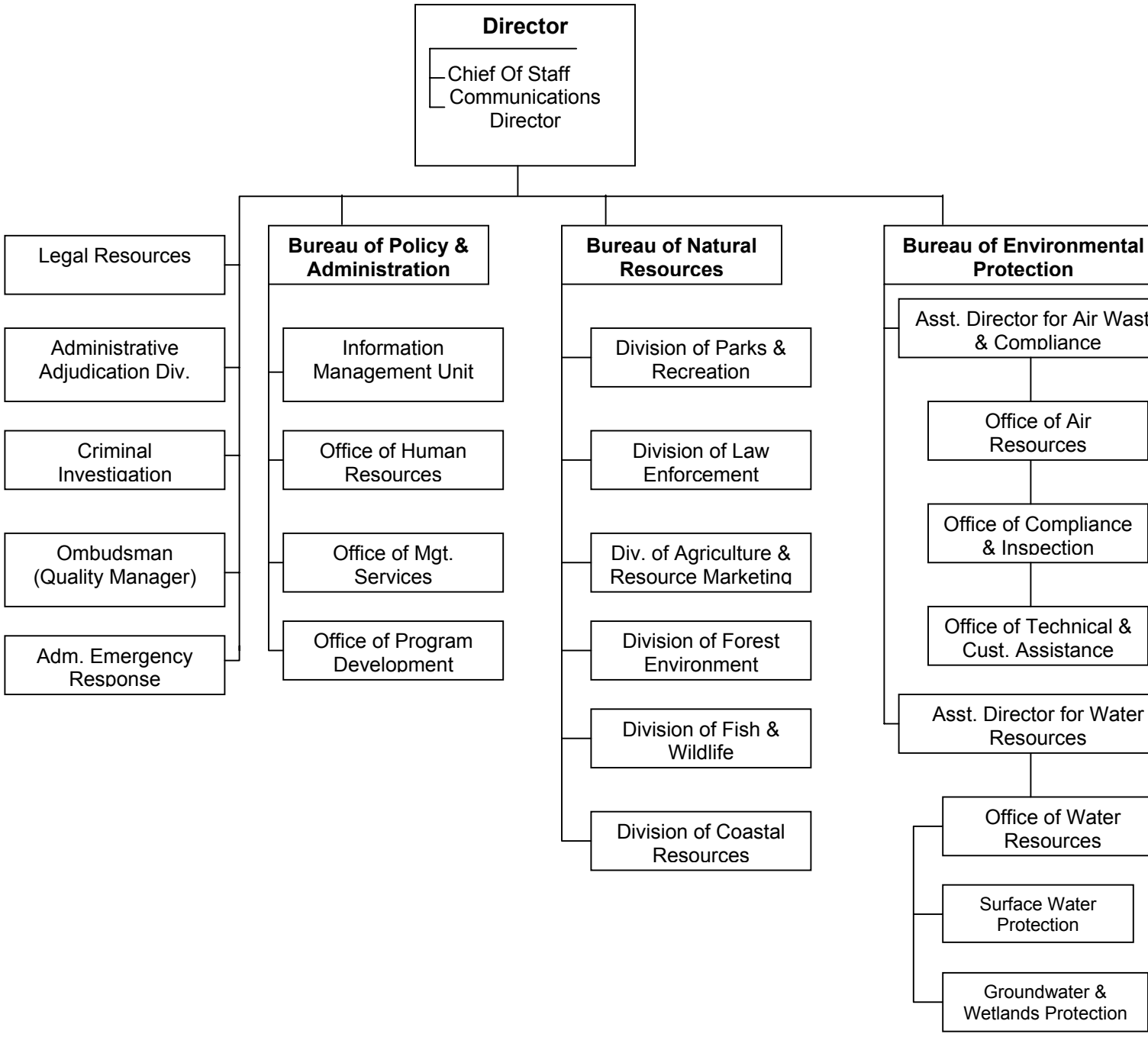
Management System Reviews will also be documented in an annual report and discussed as part of the development of the Work Plans and negotiation of the Performance Partnership Agreement. Implementation of the quality system may also be included in the Professional Development Review process for management.

The implementation, shortcomings and success of the quality management system will be tracked through quarterly reports on Work Plan implementation.

Appendix A Organizational Charts

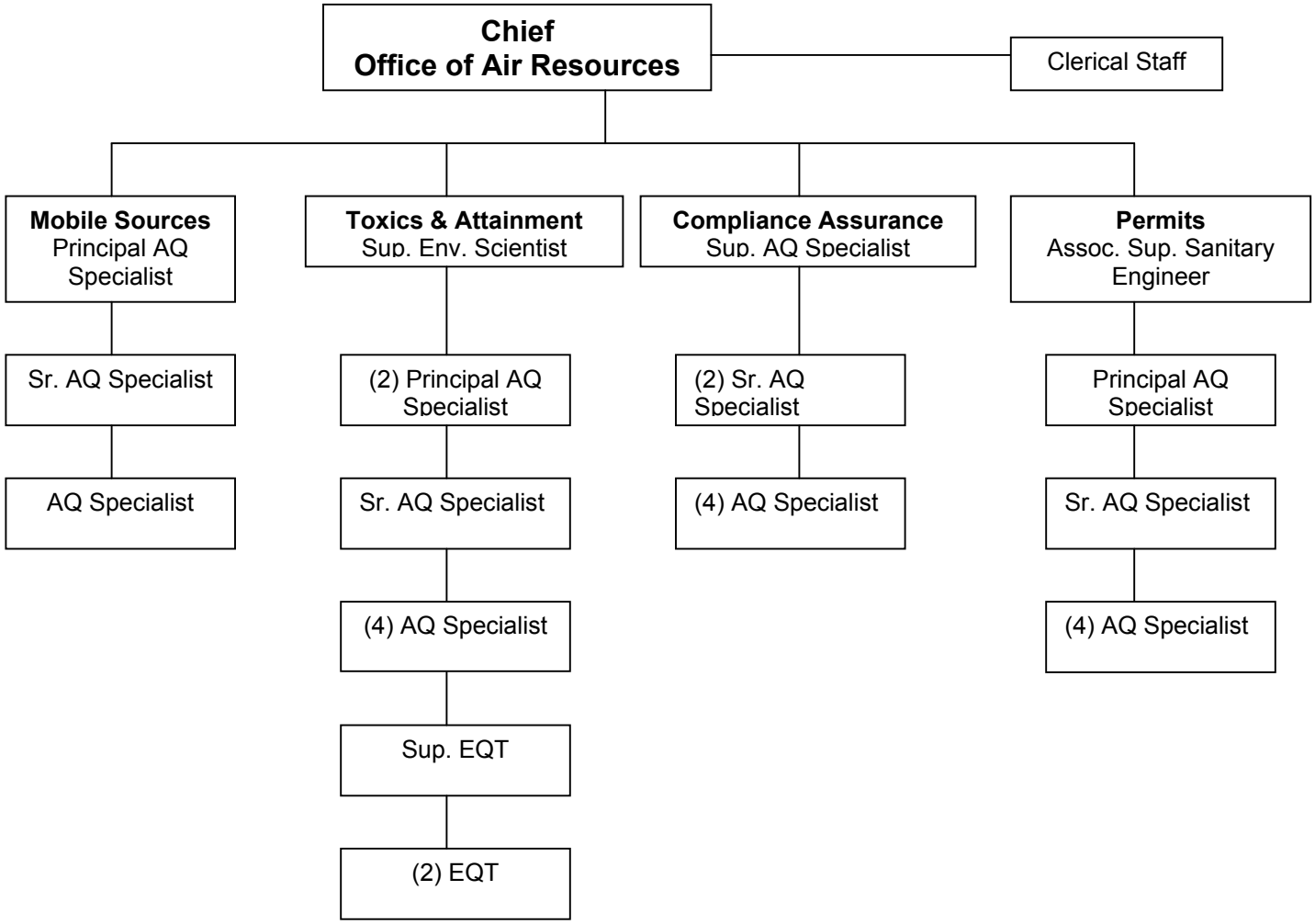
Appendix A-1 Department of Environmental Management

Department of Environmental Management Organizational Chart



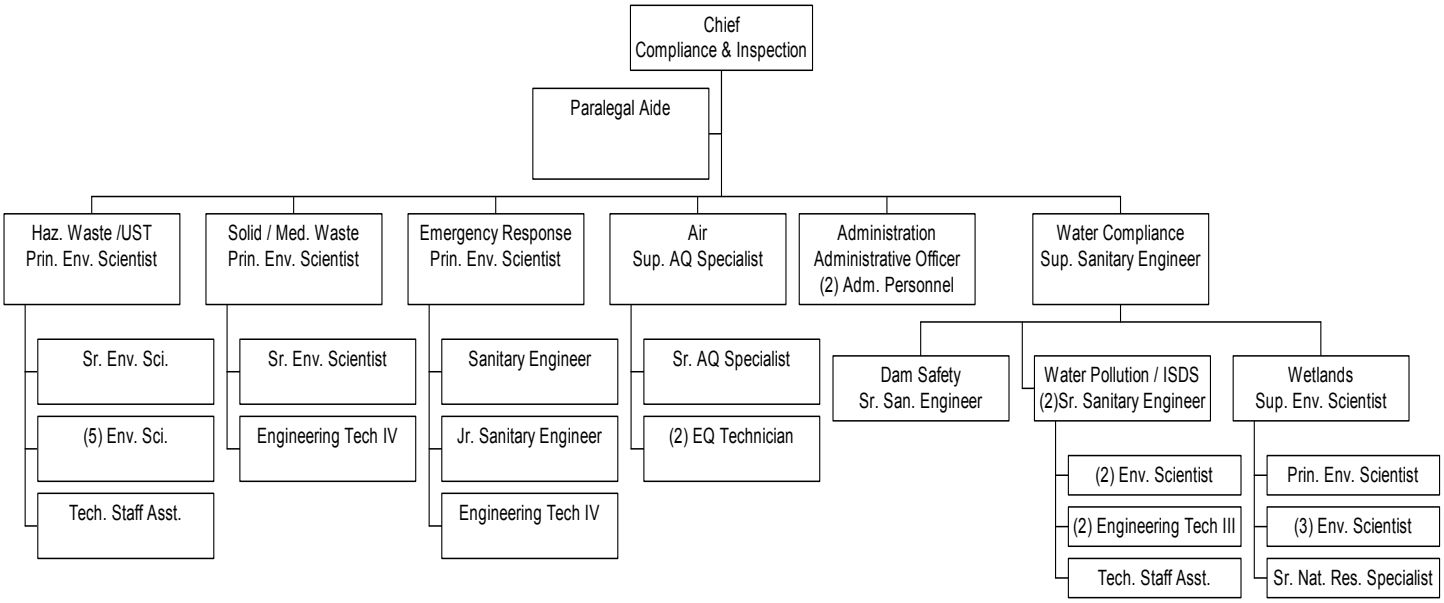
Appendix A-2 – Office of Air Resources

Office of Air Resources Organizational Chart



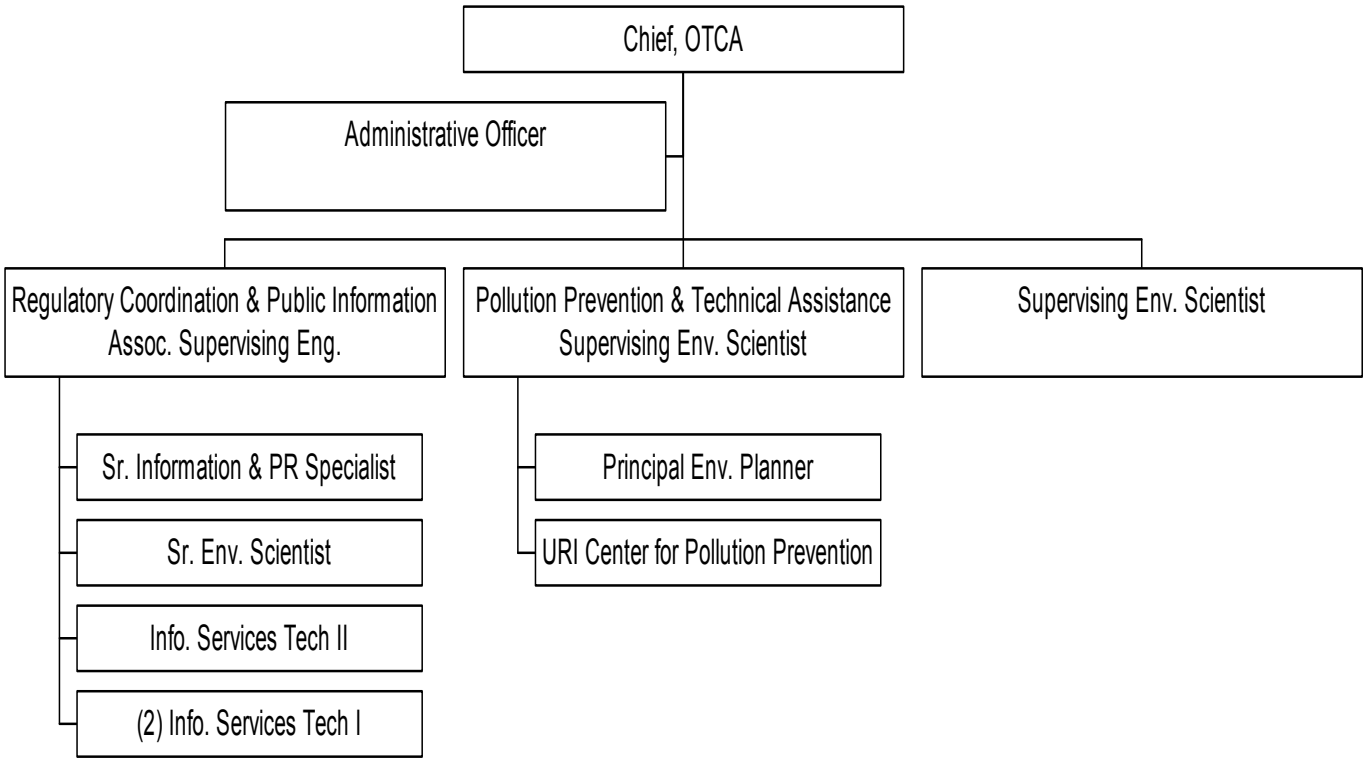
Appendix A-3 - Office of Compliance and Inspection

Office of Compliance and Inspection Organizational Chart



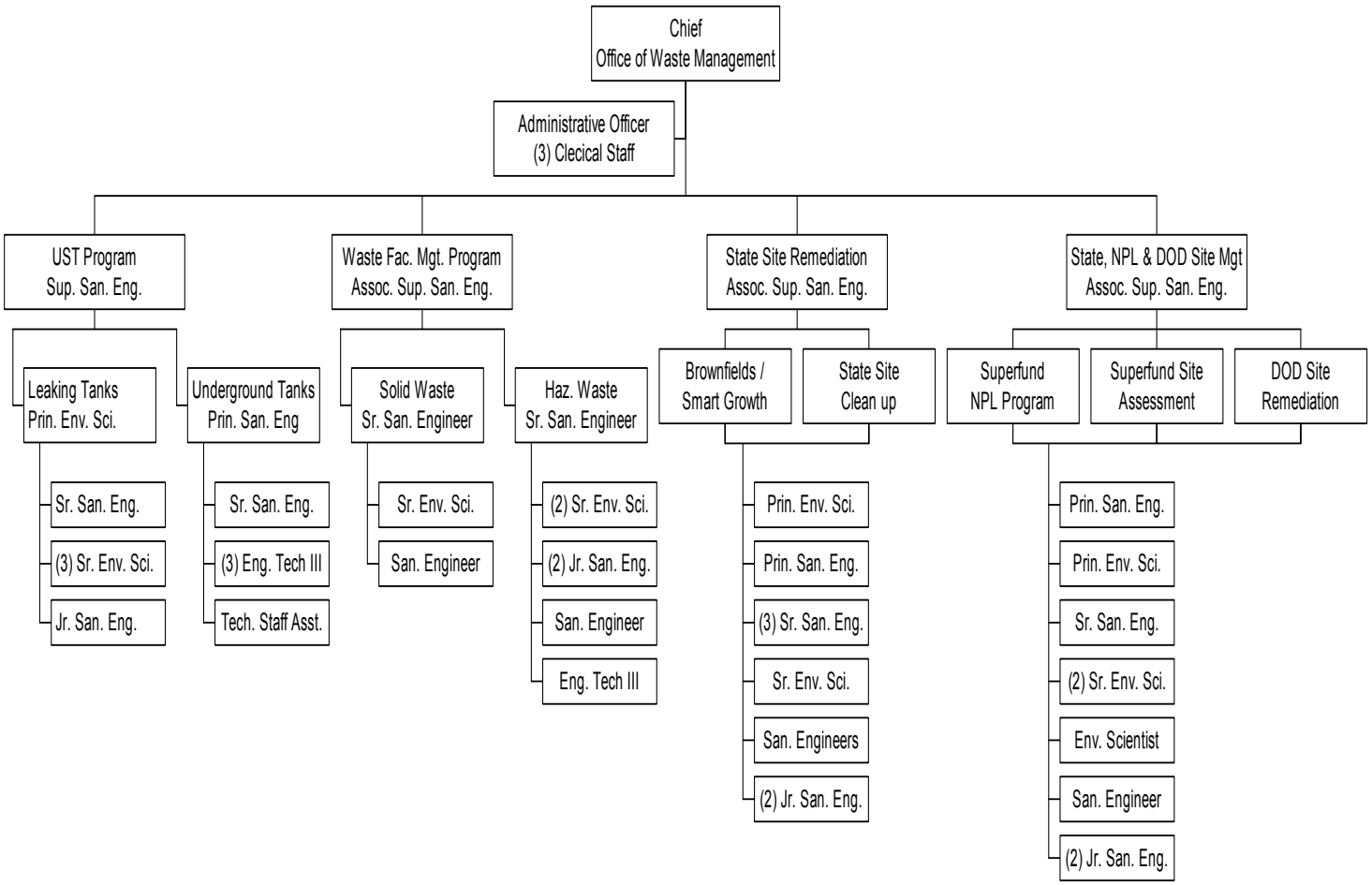
Appendix A-4 - Office of Technical and Customer Services

Office of Technical and Customer Services Organizational Chart



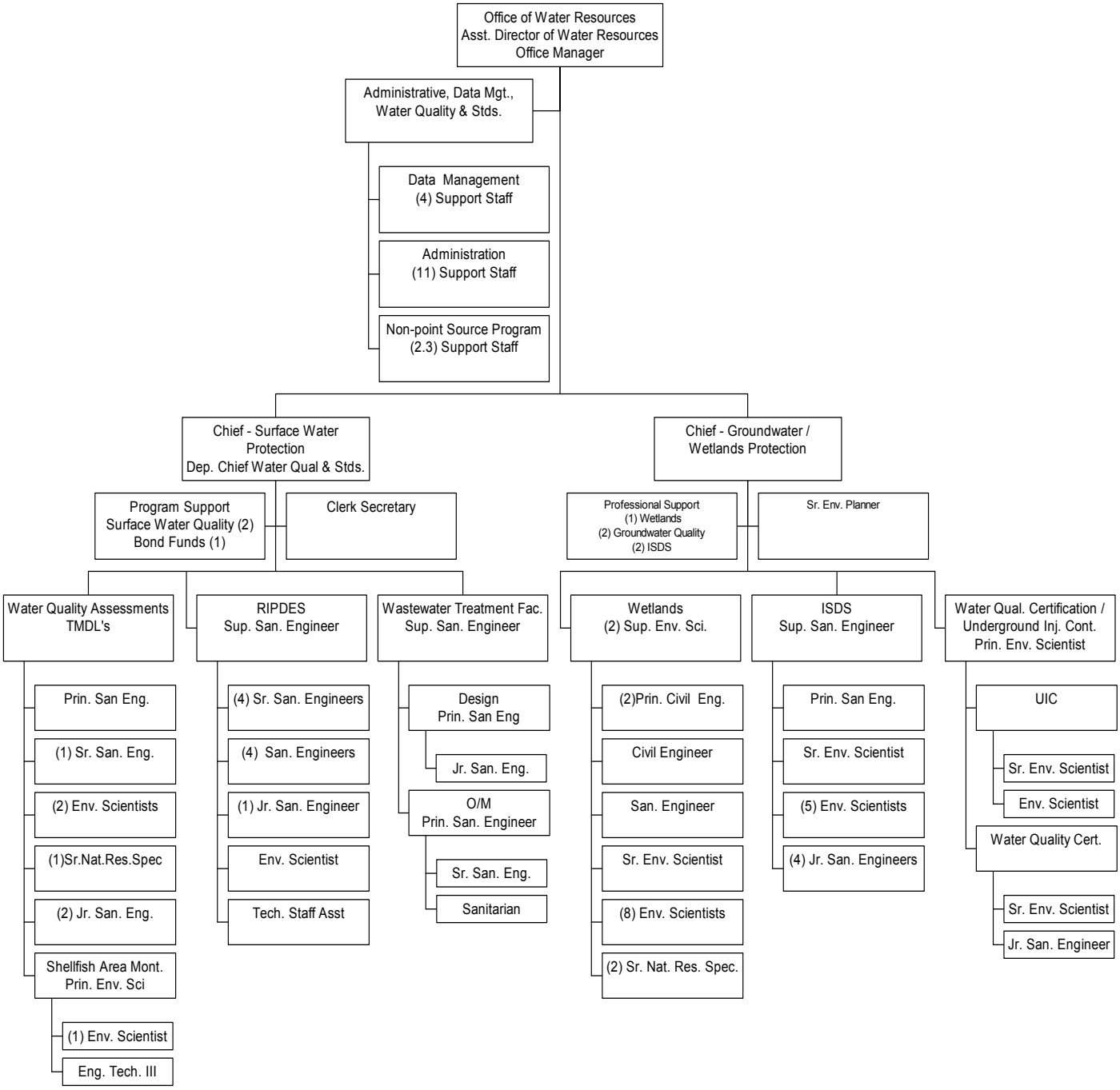
Appendix A-5 - Office of Waste Management

Office of Waste Management Organizational Chart



Appendix A- 6 -Office of Water Resources

Office of Water Resources Organizational Chart



Appendix B - Inventory of Quality Assurance Project Plans

Inventory of Quality Assurance Project Plans September 3, 2003						
Project/Program Name	**Division**	**Author**	**Contact Person**	**Last Submitted**	**Date Approved**	**Current Status**
Pesticide Sampling	Agriculture	Elizabeth Lopes-Duguay	Elizabeth Lopes-Duguay	1994	1994	Approved and in place
Pesticide formulation and residue & dilution sample analysis	Agriculture	Elizabeth Lopes-Duguay	Elizabeth Lopes-Duguay			QAPP with Mississippi State Chemical Lab-Outdated and needs to be updated.
Office of Air Resources QAPPs						
Criteria Pollutants	Air Resources	John Cucco (DOH Lab)	Barbara Morin	May 1996	May 1996	Revision being prepared
Fine Particulate Matter (PM 2.5)	Air Resources	John Cucco (DOH Lab)	Barbara Morin		August 1999	Approved and in place. Being revised, with completion projected by 12/03
Photochemical Assessment Monitoring	Air Resources	John Cucco (DOH Lab)	Barbara Morin		July 2000	Approved and in place
Air Toxics	Air Resources	John Cucco (DOH Lab)	Barbara Morin		March 2001	Approved and in place. Being revised, with completion projected by 12/03
Office of Waste Management QAPPs						
RCRA C Program Generic	OCI/ Waste Management		Laurie Grandchamp (OWM)/ M. Mulhare (OCI)			To be Developed
Superfund Pre-Remedial Program Generic	Waste Management		Cynthia Gianfrancesco		Dec. 1997	Approved and in place (needs to be revised)
Rose Hill Landfill QAPP	Waste Management	The Louis Berger Group, Inc	Cynthia Gianfrancesco	January 2003		In Draft Yes
West Kingston Town Dump / URI Disposal Area QAPP	Waste Management	Woodard & Curran Inc	Cynthia Gianfrancesco	August 2, 2002		QAPP in Final
Leaking Underground Storage Tank Program Generic	Waste Management	Sofia Kaczor	Sofia Kaczor	November 2000 (Revision)	November 2002	Approved and in place.

Inventory of Quality Assurance Project Plans September 3, 2003						
Project/Program Name	**Division / Office**	**Author**	**Contact Person**	**Last Submitted**	**Date Approved**	**Current Status**
Brownfields Program (Uses Superfund Pre-Remedial Program)	Waste Management		Kelly Owens		Dec. 1997	Approved and in place (needs to be revised)
Rose Hill Regional Landfill Superfund Site	Waste Management		Matthew Destefano		5/29/03	Approved and in place
West Kingston/URI Superfund Site	Waste Management		Matthew Destefano		12/31/02	Approved and in place
Office of Water Resources QAPPs						
TMDL-Providence/ Seekonk River, 1995 – 1996	Water Resources		Chris Turner	1995	6/25/95	Approved and in place
TMDL-Runnins River Dry Weather Coliphage, 1999	Water Resources	Al Basile (EPA)	Chris Turner	1999	1999	Approved and in place
TMDL-Kickemuit Reservoir Nutrients and Pathogens, 2000	Water Resources	Javier Velez (EPA)	Chris Turner	2000	2000	Approved and in place
TMDL-Barrington/ Palmer/ Warren Pathogens, 1996 including Belcher Stream – East, Wet Weather	Water Resources		Chris Turner	4/2/01	9/10/01	QAPP Approved.
TMDL-Barrington/Palmer/ Runnins Wet Weather Pathogens, 1998	Water Resources		Chris Turner	4/2/01		QAPPs Developed Using 1992 EPA Guidance- Four revisions were submitted between July 10, 1997 and June 29, 1998. Not yet approved.
TMDL-Barrington and Runnins River Dry Weather Pathogens, 1998 – 1999.	Water Resources		Chris Turner	4/2/01		QAPPs Developed Using 1992 EPA Guidance- Sampling was incorporated into Barrington/Palmer/Runnins wet weather QAPP.
Narrow River Pathogens, 1999 – 2000	Water Resources		Chris Turner	4/10/01		QAPP developed using Runnins River (1999) QAPP as a Model
Hunt River Pathogens, 1999	Water Resources		Chris Turner	4/10/01		Draft QAPP complete using Runnins River (1999) QAPP as a Model

Inventory of Quality Assurance Project Plans September 3, 2003						
Project/Program Name	**Division / Office**	**Author**	**Contact Person**	**Last Submitted**	**Date Approved**	**Current Status**
Saugatucket River Pathogens, 2000	Water Resources		Liz Scott	4/10/01		Draft QAPP complete using Runnins River (1999) QAPP as a Model
303(d) Supplemental Monitoring, 1998-1999	Water Resources		Chris Turner	4/6/01		QAPP developed using Runnins River (1999) QAPP as a Model
Ninigret / Green Hill Ponds 1999-2000	Water Resources		Chris Turner	2000	6/5/01	Approved
Crooked Brook	OWR		Chris Turner		6/18/01	Approved
Optical Brightner Ninigret Pond	Water Resources		Chris Turner		6/25/01	Approved
Greenwich Bay Wet Weather Pathogens, 2000 – 2001	Water Resources		Chris Turner	3/30/01	5/15/01	Approved
Indian Run Metals, 2001	Water Resources		Liz Scott		6/26/01	Approved
Sands Pond Nutrients, 2001	Water Resources		Liz Scott		7/10/01	Approved
Woonasquatucket River metals and fecal coliform, 2001	Water Resources	Kevin Bartlett	Chris Turner		9/26/00	Approved
2000 303(d) Supplemental Monitoring	Water Resources		Chris Turner		2/20/02	Approved
Greenwich Bay Nutrients, 2000 – 2001	Water Resources		Chris Turner		6/4/01	Approved
Bissel Cove	Water Resources	Jason McNamee	Chris Turner			QAPP Approved
Point Judith Pond	Water Resources		Chris Turner			Draft QAPP developed
Mashapaug Pond Nutrients, 2001 – 2002	Water Resources		Chris Turner		7/9/01	Approved
Blackstone River Various, 2001 – 2003	Water Resources		(Vacant)			To be developed by selected contractor
Ambient Water Quality Monitoring-URI	Water Resources		Connie Carey			QAPP in place
Ambient Water Quality Monitoring-USGS	Water Resources		Connie Carey			QAPP in place
Watershed Watch	Water Resources		Connie Carey			QAPP in place
Taxonomic Identification of Benthic Macroinvertebrates	Water Resources		Connie Carey		10/08/02	QAPP Approved
Stafford Pond Follow-up Monitoring	Water Resources		Ken Ayers, Elizabeth Scott		10/30/01	QAPP Approved

Appendix C - Inventory of Standard Operating Procedures

RIDEM Inventory of Standard Operating Procedures Appendix C						
No.	**SOP Name**	**SOP Status**	**Date Finalized**	**Format**	**# of Pages**	**Document Originator**
	Quality Manager					
DO-QM –1	Procedure for Developing and Approving SOPs	Final	8/6/03	Electronic	9	T. Getz
DO-QM -2	DEM Standard Operating Procedure for Developing QAPPs and SOPs	Final	8/6/03	Electronic	4	T. Getz
DO-QM -3	Quality Auditing SOP	Draft		Electronic	5	T. Getz
DO-QM -4	Technical System Audits SOP	Draft		Electronic	11	T. Getz
	Office of Waste Management					
WM-SF-1	SOP for Civil Surveying at the Rose Hill Landfill,	Draft	Jan 31, 2003	Electronic	10 pages	Louis Berger Group, Inc
WM-SF -2	SOP for Surface Water, Leachate and Sediment Sampling at the Rose Hill Landfill,		January 2003			Louis Berger Group, Inc
WM-SF -3	SOP for Underground Utility Location at the Rose Hill Landfill, Rev. 4,	Final	Jan 1997	Electronic	2 pages	Louis Berger Group, Inc
WM-SF -4	SOP for Soil Gas Survey and Evaluation at the Rose Hill Landfill, Rev. 1	Final	Jan 1997	Electronic	21 pages	Louis Berger Group, Inc
WM-SF -5	SOP for Visual-Manual Identification of Soil at the Rose Hill Landfill, Rev. 5, January 1997	Final	Jan 1997	Electronic	18 pages	Louis Berger Group, Inc
WM-SF -6	SOP for Test pitting and Soil Sampling at the Rose Hill Landfill, Rev. 3, January 1997	Final	Jan 1997	Electronic	28 pages	Louis Berger Group, Inc
WM-SF -7	SOP for Well Gauging Purging and Sampling at the Rose Hill Landfill, Rev. 5	Final	Feb 1997	Electronic	29 pages	Louis Berger Group, Inc
WM-SF -8	SOP for Disposal of Bailed Product at the Rose Hill Landfill, Rev. 4	Final	Jan. 1997	Electronic	2 pages	Louis Berger Group, Inc
WM-SF -9	SOP for Well Rehabilitation at the Rose Hill Landfill, Rev. 1, January 1997	Final	Jan 1997	Electronic	15 pages	Louis Berger Group, Inc
WM-SF -10	SOP for Low Flow Purging and Sampling Procedures for the Collection of Water Samples from Monitoring Wells		1996		Unknown	EPA
WM-SF -11	SOP – Drilling at Rose Hill Landfill	Final	Jan 1997	Electronic	22 pages	Louis Berger Group, Inc
WM-SF -12	SOP - Soil Gas Survey and Evaluation at Rose Hill Landfill	Final	Jan 1997	Electronic	13 pages	Louis Berger Group, Inc
WM-SF -13	SOP - Sampling of Surface Water and Water-Formed Deposits - Rose Hill Landfill	Final	Jan 1997	Electronic	22 pages	Louis Berger Group, Inc
WM-SF -14	SOP - Surface Water Sampling West Kingston Town Dump/ URI	Final	August 2002	Electronic	2 Pages	Woodard & Curran

RIDEM Inventory of Standard Operating Procedures Appendix C						
No.	**SOP Name**	**SOP Status**	**Date Finalized**	**Format**	**# of Pages**	**Document Originator**
WM-SF -15	SOP for Soil and Sediment Sampling –W. Kingston Town Dump / URI	Final	August 2002	Electronic	2 Pages	Woodard & Curran, Inc.
WM-SF -16	SOP for Equipment Decontamination –W. Kingston Dump/ URI	Final	August 2002	Electronic	2 Pages	Woodard & Curran, Inc.
WM-SF -17	SOP for Soil and Sediment Sampling –W. Kingston Dump / URI	Final	August 2002	Electronic	2 Pages	Woodard & Curran, Inc.
WM-SF -18	SOP - Air Monitoring at the W. Kingston Dump / URI	Final	August 2002	Electronic	2 Pages	Woodard & Curran, Inc.
WM-SF -19	SOP - Vapor Diffusion Sampling In Sediments (Volatile Organic Compounds) W. Kingston Dump/ URI	Final	August 2002	Electronic	3 Pages	Woodard & Curran, Inc.
WM-SF -20	SOP - Pore Water Sampling –W. Kingston Town Dump / URI	Final	August 2002	Electronic	4 Pages	Woodard & Curran, Inc.
WM-SF -21	SOP -Terrain Conductivity (Em-31) Method Sampling – W. Kingston Town Dump / URI	Final	August 2002	Electronic	2 Pages	Woodard & Curran, Inc.
WM-SF -22	SOP - Test Pit Sampling – W. Kingston Town Dump / URI	Final	August 2002	Electronic	3 Pages	Woodard & Curran, Inc.
WM-SF -23	SOP - Groundwater Sampling - W. Kingston Town Dump / URI	Final	August 2002	Electronic	2 Pages	Woodard & Curran, Inc.
WM-SF -24	SOP - Small Diameter Well Point Installation and Sampling – W. Kingston Town Dump / URI	Final	August 2002	Electronic	3 Pages	Woodard & Curran, Inc.
WM-SF -25	SOP - Seismic Refraction Method Sampling – W. Kingston Town Dump / URI	Final	August 2002	Electronic	3 Pages	Woodard & Curran, Inc.
WM-SF -26	SOP - Monitoring Well Installation – W. Kingston Town Dump/ URI	Final	August 2002	Electronic	3 Pages	Woodard & Curran, Inc.
WM-SF -27	SOP - Hydraulic Conductivity Testing – W. Kingston Town Dump / URI	Final	August 2002	Electronic	1 Pages	Woodard & Curran, Inc.
WM-SF -28	SOP - Tap Water / Residential Well Groundwater Sampling – W. Kingston Town Dump / URI	Draft	August 2002	Electronic	2 Pages	Woodard & Curran, Inc.
WM-SF -29	SOP – Preparation & Analysis of Dioxin and Furans Samples by USEPA Method 8290– W. Kingston Town Dump / URI	Final	June 5, 2002	Electronic (In adobe format)	60 Pages	Pace Analytical Labs
WM-1	Sampling Equipment Decontamination - SOP # 2006	Final	Unknown	Paper	Unknown	EPA
WM-2	Drum Sampling - SOP # 2009	Final	Unknown	Paper	Unknown	EPA

RIDEM Inventory of Standard Operating Procedures Appendix C						
No.	**SOP Name**	**SOP Status**	**Date Finalized**	**Format**	**# of Pages**	**Document Originator**
WM-3	Tank Sampling - SOP # 2010	Final	Unknown	Paper	Unknown	EPA
WM-4	Chip, Wipe, and Sweep Sampling SOP # 2011	Final	Unknown	Paper	Unknown	EPA
WM-5	Waste Pile Sampling - SOP # 2017	Final	Unknown	Paper	Unknown	EPA
WM-6	Soil Sampling - EPA SOP # 2012	Final	Unknown	Paper	Unknown	EPA
WM-7	Soil Gas Sampling - EPA SOP # 2149	Final	Unknown	Paper	Unknown	EPA
WM-8	Soil Sampling and Surface Geophysics - EPA SOP # 2159	Final	Unknown	Paper	Unknown	EPA
WM-9	Surface Water Sampling - EPA SOP # 2013	Final	Unknown	Paper	Unknown	EPA
WM-10	Sediment Sampling - EPA SOP # 2016	Final	Unknown	Paper	Unknown	EPA
WM-12	Groundwater Well Sampling - EPA SOP # 2007	Final	Unknown	Paper	Unknown	EPA
WM-13	Monitoring Well Installation - SOP # 2150	Final	Unknown	Paper	Unknown	EPA
WM-14	Water Level Measurement - EPA SOP # 2151	Final	Unknown	Paper	Unknown	EPA
WM-15	Well Development - EPA SOP # 2156	Final	Unknown	Paper	Unknown	EPA
WM-16	Controlled Pumping Test - EPA SOP # 2157	Final	Unknown	Paper	Unknown	EPA
WM-17	Slug Test - EPA SOP # 2158	Final	Unknown	Paper	Unknown	EPA
WM-18	HNu Field Protocol – EPA SOP # 2179	Final	Unknown	Paper	Unknown	EPA
WM-19	Chain of Custody Procedures - No number	Final	Unknown	Paper	Unknown	EPA
WM-20	Site and Safety Considerations - No number	Final	Unknown	Paper	Unknown	EPA
WM-21	Removal Program Representative Sampling Guidance – Volume 1 - Soil	Final	Unknown	Paper	45 Pages	Unknown
	Office of Water Resources					
WR-W-1	Bacteria Field Sampling SOP	Final	August 2003	Electronic	1 Page	C. Turner
WR-W-2	Equipment Maintenance/Calibration - Current Meters - SOP	Final	August 2003	Electronic	1 Page	C. Turner
WR-W-3	Fecal Coliform Sample Collection SOP	Final	August 2003	Electronic	1 Page	C. Turner
WR-W-4	Field Data Sheet	Final	August 2003	Electronic	1 Page	C. Turner
WR-W-5	Measuring Stream Discharge- Field Sampling SOP	Final	August 2003	Electronic	1 Page	C. Turner
WR-W-6	Order of Activities - Sampling	Final	August 2003	Electronic	1 Page	C. Turner
WR-W-7	Secchi Disk Measurements SOP	Final	August 2003	Electronic	1 Page	C. Turner
WR-W-8	Rapid Bioassessment Protocol For Use In Streams And Wadeable Rivers: Benthic Macroinvertebrates	Final	Nov. 2001	Electronic (Cover page only)	1 Page	C. Turner
WR-W-9	Measuring Culvert Stage & Flow-Field Sampling SOP	Final	August 2003	Electronic	2 Pages	C. Turner

RIDEM Inventory of Standard Operating Procedures Appendix C						
No.	**SOP Name**	**SOP Status**	**Date Finalized**	**Format**	**# of Pages**	**Document Originator**
WR-W-10	Reading the Staff Gauge - Field Sampling SOP	Final	August 2003	Electronic	1 Page	C. Turner
WR-W-11	Hand-Dip Sampling for the Collection of Surface Water for the Analysis of Volatile Organic Compounds	Final	August 2003	Electronic	1 Page	C. Turner
WR-W-12	Total Phosphorous Sample Collection SOP	Final	August 2003	Electronic	1 Page	C. Turner
WR-W-13	Installation and Operation of the Rainew Tipping Bucket Rain Gauge Field Sampling SOP	Final	August 2003	Electronic	3 Pages	C. Turner
WR-W-14	Temperature, Specific Conductance, Dissolved Oxygen, Salinity Field Sampling SOP	Final	August 2003	Electronic	1 Page	C. Turner
WR-W-15	Chain of Custody Form – Watershed Watch	Final	August 2003	Electronic	1 Page	C. Turner
WR-W-16	Deep Ponds: Weekly And Biweekly Water Monitoring SOP	Final	August 2003	Electronic	3 Pages	C. Turner
WR-W-17	Shallow Ponds: Weekly And Biweekly Monitoring SOP	Final	August 2003	Electronic	2 Pages	C. Turner
WR-W-18	Shallow Ponds: Tri-season Water Monitoring And Collection SOP	Final	August 2003	Electronic	2 Pages	C. Turner
WR-W-19	Deep Ponds: Tri-season Water Monitoring And Collection SOP	Final	August 2003	Electronic	3 Pages	C. Turner
WR-W-20	Chlorophyll and Nutrients Sample Collection SOP	Final	August 2003	Electronic	5 Pages	C. Turner

* Numbering system is noted on page nine in Procedure for Developing and Approving SOPs - DO-QM -1

Appendix D – Inventory of Quality Management Guidance and Policy

DEM Inventory of Quality Management Guidance and Policy

August 6, 2003

No.	Guidance or Policy Description	Status	Date Finalized	Format	# of Pages	Document Originator
WM-1	Removal Program Representative Sampling Guidance – Volume 1 - Soil		Unknown	Paper	45 pages	Unknown
WM-LUST-1	Leaking Underground Storage Tank Program Guidance Document	Final	October 2000	Electronic	28 pages	
WM-LUST 1	Closure In Place (CIP) Policy		June 15, 1998	Electronic	3 pages	T. Gray
WM-UST-1	UST Closure Assessment Guidelines		October 1998	Electronic	8 pages	
WM-UST-2	Instructions For Permanent Closure Application for Underground Storage Tank(s)			Electronic	6 pages	

Appendix E – Training Needs Inventory

Training Needs Inventory (September 2002)					
EPA ID Number	**Course ID**	**Title**	**Time**	**Number Interested in Attending Course**	**Name**
01.00	IDQTF	Intergovernmental Data Quality Task Force	½ hr		
02.00	IDQTF-Matrix	IDQTF- Quality Assurance Matrix Development	½ hr		
EPA NE QUALITY SYSTEM					
05.00	Intro to QA Unit	Introduction to EPA NE QA Unit: Activities, Services, Products	½ hr		
10.00	EPA-NE QS Overview	Overview of Region I, EPA-NE Quality System	½ hr		
11.00	QA Order 5360.1	QA Order 5360.1 CHG 1 Briefing	½ hr		
12.00	Reg. 1 QMP	Overview of EPA-NE Quality Management Plan	½ hr		
13.00	QMPs	Developing Quality Management Plans for Financial Assistance Recipients	1 ½ hrs		
14.00	QMPs	Developing Quality Management Plans for Tribes	TBD		
15.00	QA Awareness	Project Officer QA Awareness Training	3 hours	3	Connie Carey Sofia Kaczor (2)
PLANNING					
20.00	EPA NE SPP	Overview of EPA-NE Systematic Planning Process; Project Quality Objectives; Data Quality Indicators and Measurement Performance Criteria	4 hrs	4	Connie Carey Chris Turner OWM (2)
21.00	VM-Quality Planning	Quality Planning I: Project Planning and DQIs for Volunteer Monitors	2 hrs		
22.00	VM-Quality Planning	Quality Planning II: QAPP Development for Volunteer Monitors	4 hrs		
25.00	DQO Process EPA QA/G-4	Data Quality Objective Process (QAD Course)	1 day	2	OWM (2)
EPA ID Number	**Course ID**	**Title**	**Time**	**Number Interested in Attending Course**	**Name**
30.00	QAPP	Overview of EPA NE QAPP Program-Requirements and Guidance (Introduction to TM 35.00)	½ hr	4	Connie Carey Chris Turner OWM (2)
31.00	QAPP	How to be a Project Quality Manager	½ hr	8	Connie Carey Chris Turner(2) OWM (2) Sofia Kaczor (3)
32.00	QAPP	Project Planning for Licensed Site Professionals	½ hr		

EPA ID Number	Course ID	Title	Time	Number Interested in Attending Course	Name
33.00	QAPP	QAPP Development for Long Term Superfund Remedial Action Projects	½ hr	3	OWM (3)
34.00	QAPP	New Hampshire Department of Environmental Services QAPP Writing Course	1 day		
35.00 Include Modules: 20. 30. 50. 60. 80. 90	EPA-NE QAPP Program-Requirements and Guidance	EPA-NE QAPP Program-Requirements and Guidance -Overview of EPA NE QAPP Program (TM 30) EPA-NE QAPP Manual -Project Management and Objectives (Sections 1-7) TM 20) -Measurement/Data Acquisition-Sampling (Sections 8 -10) (TM-50) -Measurement/Data Acquisition -Analysis (Sections 11-15) (TM 60) -Assessment/Oversight (Sections 16 and 17) (TM-90) -Data Validation and Usability (Sections 18-20) TM-80) -Review of QAPPs by EPA-NE (Level 1 and Level 2 Reviews)	2 days	10-15	Liz Lopes-Duguay Chris Turner ? OWM (5-10) Ron Gagnon Sofia Kaczor (2)
38.00	TMDL QAPPs	QAPP Development for Rhode Island TMDL Projects	4 hours		
40.00	Generic Program. QAPP	Preparing a Generic Program QAPP	½ hr	6-11	Liz Lopes-Duguay OWM (5-10)
IMPLEMENTATION					
50.00	Sampling	Sampling Procedures and Field QA/QC (QAPP Manual Sections 8-11)	1 ½ hrs	13-18	Liz Lopes-Duguay Chris Turner (4) OWM (5-10) Sofia Kaczor Emergency Response (2)
51.00	Sampling	Basic Inspector Training Course: Overview of Sampling Issues	1 hr	8-13	Liz Lopes-Duguay OWM (5-10) Emergency Response (2)
52.00	Sampling	Sampling Documentation and Scheduling under CLP, REAP and DAS	1 hr	5 (What is REAP?)	Liz Lopes-Duguay OWM (4)
53.00	Sampling	NESTS Sample Tracking Entry	2 hrs	(What is NESTS?)	
54.00	Sampling	Groundwater Monitoring “Region I Low Stress Purging and Sampling Procedure for the Collection of Groundwater Samples from Monitoring Wells”	1 hr	9-14	OWM (5-10) Sofia Kaczor (2) Emergency Response (2)
55.00	Sampling	Sediment Sampling Problems and Solutions	½ hr	10-15	Liz Lopes-Duguay OWM (5-10) Ron Gagnon Sofia Kaczor Response (2)

EPA ID Number	Course ID	Title	Time	Number Interested in Attending Course	Name
56.00	Sampling	Forms 2 Lite (presented by Dyncorps for AOC)	7 hours	(We have been trained, but EPA needs to be able to merge FORMS 2 LITE with EQUIS for it to be useful)	
57.00	Sampling	Pretreatment Coordinators Conference: QA/QC for Sampling	½ hr		
60.00	Analysis	Overview of Analytical Methods and Analytical QA/QC (QAPP Manual Sections 11-15)	1 ½ hrs	6-11	OWM (5-10) Sofia Kaczor
61.00	Analysis	Field Analytical Technology-Screening, Innovative Technologies and Definitive Field Testing	?	9-14	OWM (5-10) Sofia Kaczor Emergency Response (3)
63.00	REAP	The REAP Contract: Analytical Services available through the Region I REAP Contract	2 hrs		
64.00	PCB	PCB Congener Analysis	1 hr	8	5 OWM (5) Emergency Response (3)
65.00	Trace Metals	Trace Metal Analyses	1 hr	7	OWM (5) Emergency Response (2)
67.00	QA/QC	QA/QC for Drinking Water Laboratories	¾ hr	7	OWM (5) Sofia Kaczor (2)
68.00	VOCs in Soil	Measuring Volatile Organic Compounds in Soil	½ hr	11-16	OWM (5-10) Sofia Kaczor (3) Emergency Response (3)
70.00	Data Documentation	Generating Data of Known and Documented Quality	½ hr	7	OWM (5) Sofia Kaczor (2)
71.00	Evidentiary Procedures	Video: Environmental Sample Documentation and Traceability	½ hr	11	OWM (5) Sofia Kaczor (3) Emergency Response (3)
ASSESSMENT					
80.00	Validation	EPA-NE Data Validation and Usability Requirements	1 hr	4-5	OWM (2-3) Sofia Kaczor (2)
81.00	Validation	EPA-NE Data Quality System: DV Manual	2 hrs	5-6	Liz Lopes Duguay OWM (2-3) Sofia Kaczor (2)
82.00	Validation	EPA-NE Data Validation Tiers	2 hrs	5-6	Liz Lopes Duguay, OWM (2-3) Sofia Kaczor (2)

EPA ID Number	Course ID	Title	Time	Number Interested in Attending Course	Name
83.00	Validation	EPA-NE Data Validation Procedures-VOA/SV, Pesticide/PCB/Inorganic	4 hrs	5-6	Liz Lopes Duguay OWM (2-3) Sofia Kaczor (2)
84.00	PES	EPA-NE Performance Evaluation Sample Program	½ hr	3-4	OWM (2-3) Sofia Kaczor
85.00	Validation	Using Data Validation Reports	TBD	4-5	OWM (2-3) Sofia Kaczor (2)
86.00	Validation	EPA-NE Dioxin/Furan Data Validation Procedures	4 hrs	2-3	OWM (2-3)
90.00	Assessment	EPA NE Assessment/Oversight	1 hr	3-4	OWM (2-3) Sofia Kaczor
91.00	MSRs	Management Systems Reviews	TBD	1	Tom Getz
95.00	TSAs	Technical System Audits	TBD		
96.00	SOPs	How to Review an SOP	½ hr	6-11	Liz Lopes Duguay, OWM (5-10)
Peer Review					
100.00	Peer Review	Peer Review Leader Training	3/4 hr	2	Tom Getz Sofia Kaczor
101.00	Peer Review	Peer Review for Senior Management: Regional Administrator/Deputy Regional Administrator and Office Directors	3/4 hr	1	Tom Getz
102.00	Peer Review	Peer Review for Office of Ecosystem Protection Managers and Regional Science Council Representatives	3/4 hr		
103.00	Peer Review	Peer Review Training for Peer Review Coordinator	3/4 hr	1	Tom Getz
Data Integrity and Fraud					
110.00	Fraud	Data Integrity and Fraud Training	2 hr	4	Liz Lopes-Duguay Sofia Kaczor (3)

a) Other Comments

- Interested in courses if applicable to writing and / or reviewing QAPP's for Brownfield sites. EPA's requirements for Brownfields sites are much less stringent than for Superfund QAPP's.
- May be interested in other classes if applicable to requirements to Brownfields QAPP's.

Appendix F – FY 2004 Training Priorities

DEM training priorities for the FY 2004:

a. VOC Sampling with the following topics covered:
   - Low flow sampling
   - Vapor intrusion in buildings
   - Dredging sampling and SOP protocols for dredging projects
   - Passive diffusion
   - Stream sampling
b. Assessment / audit training for management system reviews, project reviews, technical system audits and QAAP and SOP reviews. This should be tied into the skills needed to assess the DEM QMP.
c. Training on development of QAPP's, both programmatic and generic
d. EPA ID # 20 Quality Planning and Data Quality Indicators for Volunteers (Is there a syllabus for the course?
e. EPA Course # 25 - Data Quality Objectives Process

Appendix G

Acceptance of Quality Management Plan

- _____ _____
Director, RI Department of Environmental Management — Date
Jan Reitsma

- _____ _____
Director, RI State Program, US EPA Region I — Date
Lois Adams

- _____ _____
Regional Quality Assurance Manager, US EPA Region I — Date
Gerry Sotolongo

- _____ _____
Assistant Director for Water Resources, RIDEM — Date
Alicia Good

- _____ _____
Assistant Director for Air, Waste and Compliance, RIDEM — Date
Terrence Gray

Updates of the QMP:

- Page 11- Key personnel in the Office of Waste Management were consolidated and Cynthia Gianfrancisco is the primary Office contact.
- Page 14 -Quality System Components chart was updated to reflect progress in the QMP, development of the inventory of QAPPs, SOPs, audit procedures, system management reviews and training.
- Page 15- Office Policies and Standard Operating Procedures (SOPs) update on the inventory of DEM SOPs is detailed.
- Page 18 - Implementation of the Quality System section has been updated to reflect the progress made in the last year on program gaps identified in the 2002 Quality Management Plan.
- Page 20 - Quality System Training Program section has been updated to indicate DEM training needs and priorities for 2003.
- Page 26 - Documentation and Records has been updated to reflect DEM development of the Records Management Policy.
- Page 28 - Annual Management Systems Reviews section has been revised to indicate DEM will continue to work on developing a system for Management Reviews.
- Page 35 - Identification of Operations Needing Procedures indicates that the QMP lists an inventory of SOPs, QAPPS and Policy and Guidance documents that are used in the quality process. In addition DEM has developed SOPs that formalizes the process to develop QAPPs, SAPs and SOPs.